ICEAA - IEEE APWC
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V. Daniele, Politecnico di Torino, Italy; G. Lombardi, Politecnico di Torino, Italy

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**DUAL BAND FREQUENCY RECONFIGURABLE X-BAND RECTANGULAR DIELECTRIC RESONATOR ANTENNA**

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

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**FILTENNA BASED ON A RIDGED WAVEGUIDE FILTER INTEGRATED WITH A VIVALDI ANTENNA FOR 5G APPLICATIONS**

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

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**DUAL BAND DUAL RADIATION PATTERN MM-WAVE HEMISPHERICAL DRA FOR ON-BODY COMMUNICATION**

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;

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**COMPACT 6X6 NOLEN MATRIX WITH LUMPED ELEMENTS IN UHF BAND**

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

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**A REFLECTIONLESS BANDPASS FILTER USING LTCC TECHNOLOGY**

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

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**PRINTED BIDIRECTIONAL STRETCH ANTENNA SENSOR**

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

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**HYBRID RF ANTENNA–SOLAR CELL FOR GROUND-BASED SPACE SOLAR POWER SYSTEMS**

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

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**DESIGN AND EVALUATION OF POLARIZATION SWITCHING REFLECTIVE ELECTROMAGNETIC SURFACES ACROSS MICROWAVE TO TERAHERTZ BANDS**

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

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**COMPARATIVE INVESTIGATION ON FEEDING TECHNIQUE USAGE FOR IMPROVING CHARACTERISTICS OF SPIRAL RESONATOR ANTENNA**

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

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**25W GAN POWER AMPLIFIER FOR 7.9–8.4 GHZ RADAR AND COMMUNICATION APPLICATIONS**

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

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**DESIGN AND OPTIMIZATION OF A LOW-LOSS KA-BAND ROTARY JOINT FOR SOTM APPLICATIONS**

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

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**COMPACT DUAL-CAVITY HORN ANTENNA FOR KU-BAND SATCOM SYSTEMS**

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

**Session 14** **IEEE APWC**

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**K/KA DUAL-BAND DUAL-POLARIZATION FEED SYSTEM FOR COMPACT TRANSMIT-ARRAY SOTM ANTENNAS**

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

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**PHASED ANTENNA ARRAY CONCEPT FOR FLEXIBLE SATELLITE COMMUNICATIONS IN KA-BAND**

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

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**COMPACT, DUAL CIRCULARLY POLARIZED SATELLITE HORN ANTENNA AND FEED NETWORK COVERING FULL SATCOM KA-BAND**

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

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**BROADBAND SINUOUS ANTENNA DESIGN FOR 3U/6U CUBESAT APPLICATIONS**

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**DUAL-CIRCULARLY POLARIZED X-BAND ISOFLUX ANTENNA FOR LEO PAYLOAD TELEMETRY APPLICATIONS**

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

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**DUAL POLARIZED APERTURE FED ANTENNA FOR SUB6 GHZ 5G APPLICATIONS**

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

**Session 15** **IEEE APWC**

## Antennas and wireless systems - IEEE APWC

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**HIGH POWER SYMMETRICAL SWITCH TOPOLOGY FOR DIRECT ANTENNA MODULATED (DAM) TRANSMITTERS**

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

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**A COPLANAR SUPER WIDE-BAND MONOPOLE ANTENNA BASED ON VOLCANO SMOKE RADIATOR**

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

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**DESIGN AND ANALYSIS OF A METASURFACE ENHANCED WIDEBAND ANTENNA FOR POLARIZATION CONVERSION AND RCS REDUCTION**

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

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**IMPROVEMENT OF A 2X2 PORT SUPER WIDEBAND MIMO ANTENNA WITH A VOLCANO SMOKE GROUND PLANE**

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

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**EXPLORING FEASIBILITY AND EFFICIENCY OF A WPT SYSTEM COMPRISING A FLAT SPIRAL COIL NESTED WITHIN A LARGE HELICAL COIL**

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

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**DESIGN OF A WIRELESSLY POWERED S-BAND BACKSCATTER EDGE SENSING PLATFORM**

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

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## Propagation models - IEEE APWC

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**HUMAN BODY SHADOWING MODELING BASED ON ROTATABLE SCREENS AND UNIFORM THEORY OF DIFFRACTION**

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

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**CHALLENGES AND POTENTIAL APPROACHES IN PROPAGATION MODELING OF HIGH FREQUENCIES FOR 6G NETWORKS**

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

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**OPTIMISED VIA DESIGN AND MODELING FOR A RADIO ASTRONOMY RECEIVER**

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

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**DEEP LEARNING APPROACH TO LINE OF SIGHT DETECTION IN URBAN ENVIRONMENTS**

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

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**INSTANTANEOUS DIRECTIONAL CHANNEL MEASUREMENTS AT 14 GHZ AND 160 GHZ VIA A VIRTUAL CIRCULAR ARRAY**

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

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

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**A 1-BIT SHAPE-MORPHING UNIT CELL DESIGN FOR PHOTOTHERMALLY RECONFIGURABLE REFLECTARRAYS**

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

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**PERMITTIVITY MODE EXPANSIONS FOR THERMAL EMISSION CALCULATIONS FROM NON-ISOTHERMAL SYSTEMS**

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

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**ADVANCING RADAR TECHNOLOGY: HIGH-RESOLUTION CHAIN HOME RADAR ON OPTICAL FIBER**

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

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**ADVANCED METASURFACES FOR NEXT-GENERATION WIRELESS COMMUNICATION NETWORKS**

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

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**SUPERSCATTERERS ON A TARGET FOR TAILORING COLLECTIVE ELECTROMAGNETIC RESPONSES**

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

**Session 18** **ICEAA**

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

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**SCATTERING FROM CYLINDERS IN Π/N PEC DIHEDRAL CORNERS: AN EFFECTIVE APPROACH**

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

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**A STUDY ON SPECTRAL-DOMAIN APPROACH TO PLANE ELECTROMAGNETIC WAVE SCATTERING BY FINITE-PERIODIC LAMELLAR GRATING**

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**ELECTROMAGNETIC MODELLING FOR NON-DESTRUCTIVE DIAGNOSTICS OF OLIVE TREES**

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

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**VNA-BASED REAL-TIME GROUND PENETRATING RADAR IMAGING FOR UNMANNED AERIAL VEHICLES**

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

**Session 19** **ICEAA**

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

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**INVESTIGATING THE REGULARIZATION PROPERTIES OF THE VIRTUAL VESELAGO LENS FOR INVERSE PROBLEMS**

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

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**ON THE EXPLOITATION OF DEEP REINFORCEMENT LEARNING FOR MICROWAVE INVERSE SCATTERING**

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

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**PRELIMINARY ANALYSIS OF A MICROWAVE IMAGING SYSTEM FOR DETECTING INCLUSIONS IN NON-PLANAR HOSTING MEDIA**

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

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**A NEW TWO-STEP QUANTITATIVE MICROWAVE IMAGING APPROACH BASED ON THE CONTRACTION INTEGRAL EQUATION**

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

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**A WIGNER-BASED MIGRATION TECHNIQUE FOR TARGET DETECTION AND LOCALIZATION**

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

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**AI-DRIVEN METHOD FOR WIDEBAND GPR MICROWAVE IMAGING OF BURIED SCATTERERS**

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

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**USING SPHERICAL HARMONICS TO MODEL MUTUAL COUPLING EFFECTS ON EMBEDDED ELEMENT PATTERNS**

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

**Session 20** **ICEAA**

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

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**OVERVIEW OF LENS ANTENNAS FROM TRANSFORMATION OPTICS**

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

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**INNOVATIVE FABRICATION TECHNIQUES FOR TRANSMITARRAY AND PRINTED LENS ANTENNAS**

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**FOLDED META-OPTICS FOR COMPACT SUBMILLIMETER-WAVE RADIOMETRIC INSTRUMENTS**

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

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**AN EXPLICIT GO-BASED INVERSION APPROACH FOR DESIGNING INHOMOGENEOUS DIELECTRIC LENS ANTENNAS**

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

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**PRIOR KNOWLEDGE IN DEEP LEARNING-ENABLED GENERATIVE DESIGN OF METALENS ANTENNAS**

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

**Session 21** **ICEAA**

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

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### ADVANCED CIRCULATION MODEL STORM SURGE PREDICTIONS INFORMED BY CYGNSS MEASUREMENTS

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

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### DETECTION AND ANALYSIS OF GPS L1 BAND RADIO FREQUENCY INTERFERENCE USING SPACEBORNE GLOBAL NAVIGATION SATELLITE SYSTEM REFLECTOMETRY RECEIVERS

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### IONOSPHERIC DELAYS IN PRETTY MISSION DATA: AN OPPORTUNITY TO STUDY IONOSPHERIC F-LAYER STRUCTURE

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

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### POLARIMETRIC GNSS-R FOR SEA ICE MONITORING: PREPARING FOR ESA HYDROGNSS

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### JOINT RETRIEVAL OF SOIL MOISTURE AND VEGETATION PROPERTIES FROM GNSS-R OBSERVATIONS: A PRELIMINARY STUDY

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### INVERSION OF REMOTE RENSING SYNTHETIC DATA FOR ESSENTIAL CLIMATE VARIABLES CHARACTERIZATION

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### TOWARDS ASSIMILATION OF GNSS-R LAND OBSERVABLES IN NWP MODELS: PROTOTYPE FORWARD OPERATOR

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

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**INTEGRATION OF GNSS-R DELAY-DOPPLER MAPS INTO A LAND DATA ASSIMILATION SYSTEM**

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

**Session 22** **ICEAA**

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

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**ENSURING A SUSTAINABLE FUTURE IN LOW EARTH ORBIT**

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**EFFECT OF DEBRIS CHARGING DYNAMICS ON THE FORMATION OF PRECURSOR ION ACOUSTIC SOLITONS**

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

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**THEORY AND SIMULATION OF ELECTROMAGNETIC NONLINEAR STRUCTURES PRODUCED BY CHARGED ORBITAL DEBRIS**

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

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**PLASMA WAVES GENERATED BY RESIDENT SPACE OBJECTS: THEORY AND OBSERVATION**

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

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**ION LANDAU DAMPING OF ION ACOUSTIC SOLITONS USING PARTICLE-IN-CELL SIMULATIONS**

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

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**PLASMA SIGNATURES OF ORBITAL DEBRIS IN LEO**

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**CHARACTERIZATION OF PLASMA STRUCTURES PRODUCED BY ORBITAL SPACE DEBRIS**

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

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**MODELING THE EVOLUTION OF PLASMA-FRAGMENTS CLOUDS FROM HYPERVELOCITY IMPACTS FOR REMOTE CHARACTERIZATION OF SMALL SPACE DEBRIS**

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

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**USING HYPERVELOCITY IMPACT SIGNALS TO TRACK AND CHARACTERIZE SPACE DEBRIS**

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

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**STIMULATED EMISSION IN SPACE PLASMA**

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**LINEAR AND NONLINEAR WAVE PROPAGATION IN PLASMA -- A QUANTUM COMPUTING PERSPECTIVE**

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

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**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**

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

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**CROSS-SCALE RADIATION BELT MODELING: FROM GLOBAL STORMTIME EVOLUTION TO LOCAL WAVE-PARTICLE INTERACTIONS**

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

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**CHARACTERISTICS OF ENERGETIC ELECTRON PRECIPITATION: PROBING MAGNETOSPHERIC PROCESSES**

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

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**UNDERSTANDING STORMTIME GEOSPACE AS A COMPLEX SYSTEM: RECENT PROGRESS FROM THE CENTER FOR GEOSPACE STORMS**

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**RADIO AND PLASMA WAVE EMISSIONS FROM JUPITER: QUASILINEAR ANALYSIS OF JUNO SPACECRAFT DATA**

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

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**WEAK TURBULENCE ANALYSIS ON DYNAMIC SPECTRA OF SOLAR RADIO EMISSIONS**

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

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**PLASMA WAVE CONVERSION PROCESSES IN SPACE ENVIRONMENTS: NEW INSIGHTS INTO SOLAR FLARE PHYSICS***

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

**Session 23** **ICEAA**

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

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**NERVE RESPONSE SIMULATIONS IN ELECTROMAGNETIC MODELING AND DESIGN OF MRI GRADIENT COILS**

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

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**SENSITIVITY ANALYSIS OF A 300 MHZ TWISTED PAIR RF COIL FOR CAPTURING CONDUCTIVITY CHANGES IN A DYNAMIC ANTHROPOMORPHIC HEAD PHANTOM**

Y. Qian, Northwestern University, United States; P.P. Sanpitak, Northwestern University, United States; L.I. Navarro de Lara, Massachusetts General Hospital, United States; L.L. Wald, Harvard Medical School, United States; M.G. Bright, Northwestern University, United States; L. Golestanirad, Northwestern University, United States

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**PULSED ELECTRIC FIELDS FOR REGENERATION OF INJURED SPINAL CORD: MULTIPHYSIC AND MULTISCALE MODELING OF VIRTUAL STEM CELLS**

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

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**PHYSICS-INFORMED NEURAL NETWORKS FOR EFFICIENT ELECTRIC FIELD MODELLING IN DEEP BRAIN STIMULATION**

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

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**HIGH-FREQUENCY TRANS-SPINAL MAGNETIC STIMULATION (HF-TSMS) FOR CHRONIC NEUROPATHIC PAIN TREATMENT: A NUMERICAL OPTIMIZATION STUDY IN A PORCINE MODEL**

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

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**THEORETICAL DISTANCE CONSTRAINTS IN MULTI-SITE SHORT-PULSED MICROSCOPIC MAGNETIC STIMULATION: HOW CLOSE IS TOO CLOSE?**

G. Bonmassar, Harvard Medical School, United States

**Session 24** **ICEAA**

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**RF COUPLING AND EFFECTS SIMULATION FOR BIOLOGICAL SYSTEMS**

R. L. Gardner, Consultant, United States

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**H1N2 SWINE FLU INACTIVATION IN AEROSOL BY MEANS OF RADIATED MICROWAVES**

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

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**SENSING AND WIRELESS POWERING PERFORMANCE ASSESSMENT OF MAGNETIC RESONANCE-BASED**

**BIOELECTRONIC SENSORS**

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

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**FLEXIBLE SLOTTED PATCH ANTENNA FOR NON-INVASIVE DETECTION OF BLOOD GLUCOSE**

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

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**HIGHLY ANISOTROPIC UNIT CELLS FOR EEG HEAD PHANTOMS**

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

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**TRACKING ELBOW ANGLES WITH PRINTED DIPOLE ANTENNAS THROUGH THE PASSIVE EXTRACTION OF S11 PARAMETER AND RESONANT FREQUENCY: A PILOT STUDY**

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;

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**MICRODOSIMETRY OF 3D VIRTUAL STEM CELLS INSIDE AN ELECTRO-PULSED BIOHYBRID DEVICE FOR SPINAL CORD REGENERATION**

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

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**MODELING ELECTROPORATION DYNAMICS IN LIPOSOMES AND CELLS EXPOSED TO NANOSECOND PULSED ELECTRIC FIELDS**

**FOR OPTIMIZED DRUG DELIVERY**

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

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**DEEP LEARNING-ENABLED RECONSTRUCTION OF ELECTRICAL CONDUCTIVITY AND TRANSCRANIAL ELECTROMAGNETIC FIELD DISTRIBUTIONS**

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

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**WIRELESS RETINA STIMULATION WITH MAGNETOELECTRIC NANOPARTICLES**

H. Mokhtari Dowlatabad, USC, USA; V. Pustovalov, E. Zhang, ETH Zurich, Switzerland; S.T. Ege Iserl, K.K. Gokoffski, M.S. Humayun, USC, USA; S. Khizroev, University of Miami, USA; S. Pané, ETH Zurich, Switzerland; G. Lazzi, USC, USA

**Session 25** **ICEAA**

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**PHOTONIC-ASSISTED RF SELF-INTERFERENCE CANCELLATION UTILIZING OPTICAL FREQUENCY COMB FOR AMPLITUDE AND ARRIVAL TIME MATCHING**

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

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**RADIO FREQUENCY SIGNAL SENSING METHOD BASED ON WIDEBAND LIGHT SOURCE ELECTRO-OPTIC MODULATION AND OPTICAL INTEGRATOR**

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

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**HIGH-PERFORMANCE MILLIMETER-WAVE NOTCH FILTERS FOR FUSION PLASMA DIAGNOSTICS**

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

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**OPTIMIZATION-BASED DESIGN OF DIELECTRIC-ONLY TRANSPARENT SMART ELECTROMAGNETIC SURFACES**

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

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**LINE WAVES IN PLASMONIC-DIELECTRIC MULTIPORT NETWORKS FOR NANOPHOTONIC INTERCONNECTS**

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

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

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**INVERSE PROBLEMS AND QUALITATIVE THEORY OF THREE-DIMENSIONAL POLYNOMIAL DYNAMICAL SYSTEMS**

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

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**A METHOD OF DAMPING WAVEGUIDE EIGENMODES IN SOLVING AXISYMMETRIC DIFFRACTION PROBLEMS**

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

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**FINITE ELEMENT 3D MODELS OF MELANOMA GROWTH AND TIME-DEPENDENT BACKSCATTERED DATA FOR DIELECTRIC PROPERTIES OF MELANOMA AT 6 GHZ**

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

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**RECONSTRUCTING THE DIELECTRIC PROPERTIES OF MELANOMA IN 3D USING REAL-LIFE MELANOMA MODEL**

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

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**A HYBRID TIME-FREQUENCY APPROACH FOR BROADBAND MODELING OF HIGHLY RESONANT MICROWAVE AND RF DEVICES**

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

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**EXTENDING THE MPIE GALERKIN MOM THIN WIRE FORMULATION TO INCLUDE CURVILINEAR WIRES**

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

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**ADVANTAGES AND FDTD INTEGRATION OF FOCUSED BEAMS FOR RCS COMPUTATIONS**

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

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**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**

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

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**COMPARISON OF MOM SOLVERS FOR ANALYSING WIRE COUPLING**

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

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**HANDLING THE SHAPE-DEPENDENT PROBLEM IN THE NUMERICAL EVALUATION OF 2D AND 3D NEARLY SINGULAR INTEGRALS**

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

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**INVESTIGATION OF A LOCAL REFINEMENT STRATEGY FOR A B-SPLINE BASED DISCRETIZATION OF THE ELECTRIC FIELD INTEGRAL EQUATION**

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

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**A DATA-DRIVEN FRAMEWORK FOR 3D SHAPE RECONSTRUCTION FROM PHASELESS SCATTERING DATA**

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

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**LOW-FREQUENCY SOLUTION OF ELECTRIC FIELD INTEGRAL EQUATION BASED ON NYSTROM DISCRETIZATION**

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

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**APPLICATIONS OF MPIE BASED THEORY OF CHARACTERISTIC MODES**

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

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**DEGREES OF FREEDOM AND SHADOW AREA WITH APPLICATIONS IN WIRELESS COMMUNICATION, INVERSE SCATTERING, AND NUMERICS**

M. Gustafsson, Lund University, Sweden

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**FAST AND ACCURATE MESHLESS EM ANALYSIS OF SMALL DEFECTS IN A MOM SCHEME**

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

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**HIERARCHICAL GRID-ROBUST DISCRETIZATION OF THE ELECTRIC-FIELD INTEGRAL EQUATION BY THE METHOD OF MOMENTS**

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

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**ON A RESONANCE-FREE RAPIDLY CONVERGING SINGLE-TRACE METHOD FOR THE TRANSMISSION PROBLEM**

K. Cools, Ghent University, Belgium

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**A NEW PIVOTING HEURISTIC FOR THE CONSTRUCTION OF $H^2$-MATRICES**

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

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**EFFECTIVE 3D EM SIMULATION OF ELECTRICALLY LARGE COSITE SCENARIOS**

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

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**ON THE USE OF HUYGENS' ENCAPSULATION FOR CONFIDENTIAL ELECTROMAGNETIC MODELLING**

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

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**ASSESSING THE IMPACT OF QUADRATURE ACCURACY IN TEST INTEGRALS FOR FIELD INTEGRAL EQUATIONS**

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

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**EVOLUTION OF PYRAMIDAL ELEMENTS FROM LOW ORDER TO HIGHER ARBITRARY ORDER**

R.D. Graglia, Politecnico di Torino, Italy

**Session 28** **ICEAA**

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**CHARACTERISTIC CURRENT MODE ANALYSIS FOR AN ARRAY OF MUTUALLY COUPLED IDENTICAL ANTENNAS**

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

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**SUBARRAYS FOR PHASED APERTURE ARRAYS RADIO TELESCOPES**

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

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**EFFICIENT STORAGE OF EMBEDDED ELEMENT PATTERNS FOR THE SKA-LOW RADIO TELESCOPE**

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

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**EMBEDDED ELEMENT LENGTH OF RECEIVING ANTENNAS**

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

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**DETERMINING UNIFORM PLANAR ARRAY MUTUAL COUPLING TERMS THROUGH MULTI-EXPONENTIAL ANALYSIS**

J. Gilmore, Stellenbosch University, South Africa

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**A DUAL LINEARLY-POLARIZED ACTIVE CROSS-DIPOLE ANTENNA FOR RADIO ASTRONOMY**

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

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**A WIDEBAND PROPOSAL FOR SKA-MID BAND 345 FEED PACKAGE**

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

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**BAND 5B RECEIVER ALLOWING FOR ENHANCED OBSERVATIONS AT FREQUENCY 8.3-15.4 GHZ WITH THE MEERKAT RADIO TELESCOPE**

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

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**DSA-2000 ANTENNA SYSTEM CHARACTERIZATION AND DESIGN OVERVIEW**

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

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**A QUAD-RIDGE FEED HORN FOR NGVLA COVERING AN OCTAVE BANDWIDTH**

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

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**PRELIMINARY BASELINE ANTENNA DESIGN FOR THE BLACK HOLE EXPLORER (BHEX) MISSION**

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

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**DICHROIC DUAL-ANGLE REFRACTOR: MULTI-CELL HUYGENS' METASURFACE-BASED CIRCUIT APPROXIMATION**

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

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**TOWARDS AN UPDATED FEED ANTENNA FOR THE HIRAX TELESCOPE**

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

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**ANTENNA SIMULATION VERIFICATION FOR LOW-FREQUENCY RADIO ASTRONOMY**

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

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**BALUN CIRCUIT MODELLING FOR GLOBAL 21-CM EXPERIMENTS**

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

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**A PRELIMINARY STUDY FOR A COMPENSATED LARGE SPHERICAL REFLECTOR ANTENNA USING SUB-REFLECTARRAYS**

L. Olmi, IR. Nesti, INAF, Italy

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

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**ADVANCEMENTS IN MAGNETOSPHERE-IONOSPHERE-THERMOSPHERE SIMULATIONS: PRELIMINARY FINDINGS FROM OPENGGCM AND AROTHRON COUPLING**

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;

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**GLOBAL MODELING OF THE MESOSCALE BUILDUP OF THE RING CURRENT AND ITS ROLE IN MAGNETOSPHERE-IONOSPHERE COUPLING**

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

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**ADVANCES IN AURORAL CONDUCTANCE MODELING USING THE SPACE WEATHER MODELING FRAMEWORK**

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

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**ELECTROMAGNETIC WAVES AND THEIR EFFECTS ON ENERGETIC ELECTRONS IN THE INNER-MAGNETOSPHERE**

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

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**AI-DRIVEN ADVANCES IN PHYSICAL INSIGHTS: EXPLORING THE NEAR-EARTH SPACE ENVIRONMENT**

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

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**THOMSON SCATTERING FORWARD MODEL FOR NON-MAXWELLIAN PLASMAS**

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

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**MAGE SIMULATIONS OF THERMOSPHERE AND IONOSPHERE RESPONSES TO SUBAURORAL POLARIZATION STREAMS (SAPS)**

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

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**KINETIC MODELING OF THE MAGNETOSPHERE — GLOBAL HYBRID SIMULATION**

Y. Lin, Auburn University, United States

**Session 30** **ICEAA**

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

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**PERMITTIVITY MODE EXPANSIONS FOR METASURFACE DESIGN**

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

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**ZERO-REFLECTION FUNNELING AND SCULPTING OF OPTICAL WAVES THROUGH NON-MAGNETIC METASURFACES**

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

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**MODAL ANALYSIS OF LEAKY MODES SUPPORTED BY PLANAR METALLIC COMPLEX SHAPED CORRUGATIONS**

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

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**A RADIAL GLIDE-SYMMETRIC CORRUGATED SECTORIAL LEAKY-WAVE ANTENNA**

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

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**DYNAMIC PHASE MODULATION OF THZ GUIDED WAVES USING MEMS-INTEGRATED VALLEY PHOTONIC CRYSTALS**

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

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**DIRECTIONS OF REFLECTION AND POLARIZATION IN PTD-SYMMETRIC STRUCTURES IN RESPONSE TO ARBITRARY INCIDENT ANGLES**

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

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**PTD-SYMMETRIC DOUBLE EDGE LINE**

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

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**ANALYSIS OF A RECTANGULAR METALLIC CAVITY WITH METASURFACE WALLS**

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

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**MODULAR SYNTHESIS OF DUAL-BAND METAGRATINGS FOR CO-DIRECTED ANOMALOUS REFLECTION**

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

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**RECONFIGURABLE SPATIAL POWER SPLITTER USING SINGLE LAYER CYLINDRICAL PLASMA DISCHARGES**

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

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**FROM CHIRAL TO OMEGA RESPONSE: SYMMETRY BREAKING IN BIANISOTROPIC KNOT-PARTICLES**

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**OVERCOMING THE UNIFORMITY DEFECTS IN TWO-DIMENSIONAL BEAM-MULTIPLIERS VIA DAMMANN METASURFACES**

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**Session 31** **ICEAA**

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

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**SUPERDIRECTIVE AND UNIDIRECTIONAL SPHERICAL DIELECTRIC LENS ANTENNAS**

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**DESIGN OF A METASURFACE LUNEBURG LENS FOR 2-D WAVEFRONT SHAPING**

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

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**ENABLING 2-D ANGULAR SIGNAL ROUTING IN SMART RADIO ENVIRONMENTS THROUGH SURFACE-WAVE-BASED METASURFACE DESIGN**

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**EMERGING SOLUTIONS AND DESIGN PARADIGMS FOR ELECTROMAGNETIC WAVE MANIPULATION USING EM SKINS**

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**BOOSTING DATA ENCODING INTO PASSIVE METASTRUCTURES USING MACHINE LEARNING PREDICTIVE MODELS**

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

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**DUAL-BAND TRANSMITARRAY ARCHITECTURE FOR LOW-PROFILE DESIGN**

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**MODAL ANALYSIS OF A CENTER-SYMMETRIC LINE WAVEGUIDE**

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**PARAMETRIC MODEL ORDER REDUCTION FOR FAST DIELECTRIC MATERIAL AND FREQUENCY SWEEP IN HUYGENS METASURFACES**

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

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**SCATTERING MATRIX EXTRACTION OF OBJECTS WITH NON-CANONICAL SHAPES**

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

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**GRADED TEMPORAL METAMATERIALS USING HYPERBOLIC TANGENT PROFILE**

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**THIRD ORDER NONLINEARTIES IN NONLOCAL METASURFACES**

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

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**NONLINEAR-NONLOCAL FLAT OPTICS FOR SPACE-TIME IMAGE PROCESSING**

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

**Session 32** **IEEE APWC**

## Signal processing antennas and systems - IEEE APWC

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### NEAR FIELD TRANSMISSION USING HERMITE-GAUSSIAN MODES

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### OPTICAL UNDERSAMPLING-BASED ESTIMATION OF FREQUENCY AND DOA FOR MULTI-BAND SIGNALS

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### A SWITCHED BEAM ANTENNA WITH PATTERN DIVERSITY FOR WI-FI APPLICATIONS

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

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### FAST AND PRECISE DIRECTION OF ARRIVAL ESTIMATION BASED ON SPACE AND FREQUENCY DIVISION MULTIPLE ACCESS

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### DEVICE-FREE LOCALIZATION WITH MULTIPLE ANTENNA RECEIVERS: SIMULATIONS AND RESULTS

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### REALISTIC ANALYSIS OF RIS-ENHANCED V2V COMMUNICATION IN THE PRESENCE OF ENVIRONMENTAL EFFECTS AND VEHICLE MOBILITY

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### ANALYSIS AND OPTIMIZATION OF UNILATERAL STACKED INTELLIGENT METASURFACES BY USING A MULTI-PORT NETWORK MODEL

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

**Session 33** **ICEAA/IEEE APWC**

## Artificial intelligence and novel optimization techniques applied to electromagnetics - ICEAA/IEEE APWC, Organized by F. de Flaviis

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### INVERSE DESIGN OF ELECTROMAGNETIC DEVICES VIA LEARNING-ASSISTED APPROACHES

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### CROSSTALK OPTIMIZATION IN STRIPLINES BASED ON COMPUTATIONAL TIME DOMAIN FOR ELECTROMAGNETIC COMPATIBILITY-INTERFERENCE

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### ANTENNA NEAR-FIELD RECONSTRUCTION FROM FAR-FIELD DATA USING CONVOLUTIONAL NEURAL NETWORKS

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

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### ANALOGUE IN-MEMORY COMPUTING FOR WIRELESS COMMUNICATION SYSTEM

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### ADJOINT OPTIMIZATION OF HIGH-PERFORMANCE REFLECTARRAYS AND LENS ANTENNAS

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### DATA-EFFICIENT SUPERVISED LEARNING FOR RF AND MM-WAVE CIRCUIT DESIGN: TECHNIQUES, CHALLENGES, AND BENEFITS

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### ELECTROMAGNETIC APPLICATIONS OF MACHINE LEARNING IN SPACE TECHNOLOGY

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**MACHINE LEARNING-ASSISTED ESTIMATION OF SUBSURFACE ELECTRICAL PROPERTIES IN MULTILAYER MEDIA WITH ROUGH SURFACES**

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**PHYSICS-DRIVEN INTELLIGENT DESIGN FOR METASURFACES BY USING METAPHYNET**

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

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**TOPOLOGICAL OPTIMIZATION OF ELECTROMAGNETIC STRUCTURES BASED ON PHYSICS-INFORMED NEURAL NETWORKS**

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**UTILIZATION OF GA AND CMA-ES OPTIMIZERS IN CONFIGURING ULTRA-WIDEBAND SPLINE-BASED LEAF-SHAPED PATCH MONOPOLE ANTENNA**

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**EFFICIENT MODELING OF MULTI-PURPOSE DUAL-BAND REFLECTARRAY CELLS USING SUPPORT VECTOR REGRESSION**

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**SPARSE PHASED ARRAY OPTIMIZATION USING DEEP LEARNING**

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**PREDICTING RCS OF 2D OBJECTS WITH ARBITRARY SHAPES USING GAUSSIAN PROCESS REGRESSION**

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**RECENT DEVELOPMENT OF NEURAL NETWORK-BASED EQUALIZERS FOR HIGH-SPEED CIRCUITS**

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**WSPPSO OPTIMIZATION APPLIED TO ELECTROMAGNETIC PROBLEMS**

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**MULTI-INPUT 2D CONVOLUTIONAL NEURAL NETWORK FOR RADAR TARGET IDENTIFICATION**

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

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**SURROGATE MODELING WITH HYBRID CNN-RNN AND GAN ARCHITECTURES FOR ANTENNA DESIGNS**

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

**Session 35** **ICEAA**

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

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**MODEL ORDER REDUCTION IN ELECTROMAGNETICS: A SHORT SURVEY**

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

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**A REDUCED BASIS METHOD FOR PARAMETRIC FAST FREQUENCY SWEEP IN ELECTROMAGNETIC DEVICES**

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

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**NONLINEAR DIMENSIONALITY REDUCTION OF ELECTROMAGNETIC MODELS FOR SURROGATE MODELING**

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

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**EFFICIENT GENERATION OF COMPACT AND STABLE EQUIVALENT CIRCUITS FOR LARGE-SCALE MULTIPORTS**

T. Bradde, Politecnico di Torino, Italy

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**STRUCTURED NEURAL ODE FOR MOR OF NONLINEAR DYNAMIC ELECTROMAGNETIC MODELS**

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**ONE-STOP-SHOP FOR MODELING OPTICAL FREQUENCY COMB GENERATION**

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**NON-UNIFORM DISTRIBUTION EFFECTS ON PLASMA-BASED METASURFACES**

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**MODEL OF FABRY–PEROT RESONATOR WITH FLAT METAL AND DIELECTRIC MIRRORS**

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**ANALYSIS OF MICROSTRIP ANTENNAS BASED ON A MODAL APPROACH**

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**TRANSITIONS IN MULTILAYER PCB TECHNOLOGY FOR MMWAVE LOW LOSS TRANSMISSION LINES**

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

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### CHARACTERIZATION OF ELECTRIC FIELD SENSOR INSTABILITIES USING LABORATORY MEASUREMENTS AND SIMULATIONS

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### LABORATORY INVESTIGATION INTO ELECTRIC FIELD SENSOR INSTABILITIES: TESTING AND FIRST CAMPAIGN ANALYSIS

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

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### DEVELOPMENT OF THE AMBIPOLAR ELECTRIC FIELD IN A COMPRESSED CURRENT SHEET WITH AND WITHOUT A GUIDE FIELD

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### SHEAR ALFVÉN WAVE ANTENNAS IN THE LARGE PLASMA DEVICE

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### SOLUTION OF THE WAVE EQUATIONS FOR A CYLINDRICAL WHISTLER DUCT

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### LANGMUIR WAVES AT COMET 67P/CHURYUMOV-GERASIMENKO

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### WAVE-PARTICLE CORRELATIONS DURING MAGNETIC RECONNECTION IN PHASMA

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**SEARCH FOR ENHANCED SCATTER FROM PLASMA WAVES WITH SPACE OBJECTS IN ORBIT OVER THE JRO VHF RADAR**

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**EXPERIMENTAL INVESTIGATION OF ORBITAL DEBRIS SOLITON GENERATION**

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**PARTICLE FUELING IN MULTI-ANTENNA HELICON PLASMAS**

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**USING DUST PLASMA INTERACTIONS TO SHED LIGHT ON MAGNETIC FIELD ALIGNED ELECTRON DENSITY STRUCTURES IN THE MAGNETIZED DUSTY PLASMA EXPERIMENT (MDPX)**

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**HELICON WAVE-PLASMA INTERACTION IN LINEAR AND TOROIDAL GEOMETRIES WITH BIRDCAGE RESONANT ANTENNAS**

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**EXPERIMENTAL ASSESSMENT OF THE PERFORMANCE OF AN ELECTRON CYCLOTRON RESONANCE ACCELERATION (ECRA) THRUSTER OPERATED WITH IODINE**

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**NRL SPADE-3 EXPERIMENT**

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**A NOVEL EQUIVALENT CIRCUIT PRESENTATION FOR TWO-ELEMENT 5G WIDEBAND DIELECTRIC RESONATOR ANTENNA**

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

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**DESIGN OF A HIGH-GAIN ANTENNA SYSTEM FOR MM-WAVE FULL-DUPLEX COMMUNICATION**

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

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**WIDE-ANGLE BEAM SCANNING LEAKY-WAVE ANTENNA WITH BUILT-IN BANDSTOP FILTERING FOR SENSING IN ISAC APPLICATIONS**

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**DUAL RIS CONFIGURATION FOR SIGNAL ENHANCEMENT IN L-SHAPED CORRIDORS**

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**PHYSICALLY UNCLONABLE REFLECTING INTELLIGENT SURFACES FOR CYBER-PHYSICAL SECURITY IN SMART WIRELESS NETWORKS**

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**ARTIFICIAL MATERIAL WITH MULTIPARAMETER TO CONTROL EFFECTIVE PERMITTIVITY AND ITS APPLICATION IN RESONANT CAVITY ANTENNA**

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**A DIELECTRIC ANTENNA FOR LEAKY- AND STANDING-WAVE RADIATIONS**

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

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**OMNIDIRECTIONAL COMPACT MICROSTRIP ANTENNA IN 920MHZ BAND FOR OCEAN WIRELESS SENSOR NETWORK**

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**ANALYSIS OF THE EFFECTS OF DIELECTRIC MEDIA ON MAGNETIC COUPLING WPT USING FILTER THEORY**

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**AN ULTRA-WIDEBAND BOR-SPR ANTENNA BACKED BY A CONICAL GROUND PLANE**

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

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**DUAL-SENSE CIRCULARLY POLARIZED WAVEGUIDE ANTENNA DESIGN USING TWO ORTHOGONAL PROBES**

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

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**A LOW-PROFILE DUAL-BAND MULTI-PORT DIVERSITY ANTENNA**

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

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**RECONFIGURING THE OPERATING FREQUENCY OF A GALLIUM-BASED LIQUID METAL YAGI-UDA ANTENNA BY STRETCHING**

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**A 3D-SIW CIRCULARLY POLARIZED HIGH GAIN HORN ANTENNA FOR THE LOWER SUB-TERAHERTZ BAND**

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**MILLIMETER-WAVE PHASED ARRAY ANTENNAS WITH MIXED SUB-ARRAYS AND SINGLE-ELEMENTS FOR SUPPRESSED GRATING LOBES**

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**LOW-PROFILE WIDEBAND GNSS ANTENNA WITH ENHANCED FRONT-TO-BACK-RATIO WITHOUT ADDITIONAL GROUND PLANE**

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**DESIGN OF WIDEBAND ANTENNA AND ANTENNA PAIR USING THE CONCEPT OF BUILDING BLOCK**

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**METALINE ARRAY ANTENNA USING AXIAL ROTATION TECHNIQUE**

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**AI-DRIVEN OPTIMIZATION FOR LOW-PROFILE MULTI-BAND ANTENNAS FOR DIRECTION FINDING**

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**AN ELECTRICALLY SMALL COMPOSITE MONOPOLE ANTENNA FOR LONG-WAVE BANDS**

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

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**LOCATION DEPENDENCE OF WPT EFFICIENCY CHARACTERISTICS BETWEEN A CIRCUIT-SHAPED LEAKY-WAVEGUIDE AND A Λ/2 DIPOLE ANTENNA DUE TO ELECTRIC FIELD DISTRIBUTION**

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

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**HOURGLASS SLOT ANTENNA WITH EXPONENTIAL FLARE FOR WIDEBAND AND DIRECT COAXIAL CABLE FEED**

M. Matsunaga, Shizuoka University, Japan

**Session 40** **ICEAA**

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

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**SIMPLIFIED RISLEY PRISM-INSPIRED 2-D BEAM STEERING WITH A TILTED-BEAM RESONANT CAVITY ANTENNA AND SINGLE METASURFACE**

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

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**METASURFACE-BASED CIRCULAR POLARIZATION CONVERSION FOR A PATCH ANTENNA AT 5.8 GHZ**

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

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**AUTOMATED FSS DESIGN AND OPTIMIZATION WITH TIME SERIES FORECASTING PROCESS THROUGH COMBINED CNN-RNN MODEL**

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

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**MECHANICALLY RECONFIGURABLE GRIN LENS CONCEPT FOR FOCUSING AND BEAMFORMING APPLICATIONS**

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

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**ADVANCED PHASE ROTATION UNIT CELLS FOR BEAM STEERING AND POLARIZATION CONVERSION WITH ENHANCED SIDELOBE PERFORMANCE**

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

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**HOLEY PHOTONIC CRYSTALS AS 3-D PRINTED STRUCTURES FOR LEAKY WAVE ANTENNAS IN K-BAND**

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

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**EXPERIMENTAL CHARACTERIZATION OF THE TRAVELING WAVE STRENGTH IN MODULATED MICROSTRIP-LINE-BASED HIGH IMPEDANCE SURFACE THROUGH INFRARED THERMOGRAPHY**

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

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**ANALYTICAL DESIGN OF PRACTICAL-THICKNESS SLAB DEVICES SUPPORTING BOUND STATES IN THE CONTINUUM**

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

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**ULTRATHIN METASURFACE DESIGN FOR ENHANCED WIRELESS POWER TRANSFER TO DEEP TISSUE IMPLANTS**

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

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**WATER BASED FREQUENCY SELECTIVE SURFACE ACTING AS AN ABSORBER**

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

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**TRI-BAND OPTICALLY TRANSPARENT ABSORPTION METASURFACE FOR RCS REDUCTION**

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

**Session 41** **ICEAA**

## Metamaterials and metasurfaces - ICEAA

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**ENHANCING DEVICE AUTHENTICATION FOR RF-FINGERPRINTED RECONFIGURABLE INTELLIGENT SURFACES VIA CONVOLUTIONAL NEURAL NETWORK**

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

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**LONG-RANGE INTERACTIONS IN METAMATERIALS CAN INDUCE UNUSUAL EDGE STATES**

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

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**EXPLORING FREQUENCY STABILITY OF RADIATION PATTERNS IN ANTENNA DESIGNS WITH NONLOCAL SHIELDING**

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

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**MAGNETO-OPTICAL METASURFACES BASED ON BISMUTH IRON GARNET**

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

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**A WIDEBAND ACTIVE FREQUENCY SELECTIVE RASORBER BASED ON HYBRID ABSORPTIVE-DIFFUSIVE MECHANISM**

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

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**CSA ALGORITHM-BASED DESIGN OF A MULTIFUNCTIONAL METASURFACE LENS FOR BEAMFORMING APPLICATIONS**

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

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**EFFICIENT SURFACE IMPEDANCE MODELING OF CONFORMAL METASURFACES FOR RCS REDUCTION OF DRONES**

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

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**A PASSIVE RF-POWERED METAMATERIAL SENSOR FOR AUTONOMOUS SOIL MOISTURE MONITORING**

M. Amiri, University of Technology Sydney, Australia

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**MICROFABRICATION OF TRASPARENT ELECTROMAGNETIC METASURFACES FOR 5G/6G WIRELESS COMMUNICATIONS**

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

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**PRELIMINARY RESULTS ON A HEXAGONAL LATTICE META-LENS FOR SATCOM ON THE MOVE APPLICATIONS**

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

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**INFERRING SURFACE SUSCEPTIBILITIES FOR MASK-BASED METASURFACE BEAM SHAPING USING DEEP LEARNING**

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

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**SLIDING-SPLIT-STRIP METAMATERIAL WITH TUNABLE DIELECTRIC AND PLASMONIC PROPERTIES**

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

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**BACKSCATTERING MECHANICAL SENSING THROUGH METAMATERIALS**

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

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**NOVEL EMBEDDED METAL VIA IN DIELECTRIC SPLIT RING RESONATOR STRUCTURE TO ENHANCE ISOLATION FOR FULL-DUPLEX APPLICATIONS**

J.M. Zaid, Huawei Technologies, Canada

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

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**HOW TO TRAIN YOUR RADAR: AI-BASED DETECTION OF ANTENNA CONTAMINATION**

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

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**THE FUTURE OF AUTONOMOUS PARKING**

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

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**EVALUATING INTEGRATED AUTOMOTIVE RADAR SENSOR PERFORMANCE UTILIZING ANTENNA DIGITAL TWINS**

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

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**ADDRESSING THE CHALLENGES OF RADAR-BASED ENVIRONMENTAL SENSING FOR AUTONOMOUS GROUND VEHICLES IN OFF-ROAD TERRAIN**

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

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**HISTOGRAM-BASED ANALYSIS OF UAV-SAR DATA FOR AGRICULTURAL VEGETATION CLASSIFICATION**

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

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**ALL-CERAMIC MM-WAVE CHIPLESS SENSORS FOR WIRELESS TEMPERATURE SENSING OVER 1000 °C IN CLUTTERED AND OBSTRUCTED ENVIRONMENTS**

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

**Session 43** **ICEAA**

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

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### A NOVEL DIELECTRIC WAVEGUIDE BASED MATERIAL CHARACTERIZATION SYSTEM FOR NON-DESTRUCTIVE DEFECT DETECTION

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

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### CHARACTERIZATION OF DIELECTRIC PROPERTIES AND ANISOTROPY OF 3D-PRINTED DIELECTRICS FOR MM-WAVE APPLICATIONS

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

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### A MULTI-BAND TRANSITION FROM MICROSTRIP LINE TO 3D-PRINTED DIELECTRIC WAVEGUIDE FOR THE K- AND E-BAND

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

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### ORTHOMODE TRANSDUCER AND POLARIZER FOR THE PRACTICAL APPLICATION OF CIRCULAR DIELECTRIC WAVEGUIDES IN W BAND AND D BAND

M. Schneider, University of Bremen, Germany

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### 3D-PRINTED DIELECTRIC WAVEGUIDE CONNECTIONS FOR MMWAVE FREQUENCIES: SOLVENT BONDING AND REFLECTION ANALYSIS

C. Baer, Ruhr University Bochum, Germany

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### DIFFERENTIAL SUBSTRATE INTEGRATED WAVEGUIDE COUPLING FOR WHISPERING GALLERY MODE RESONATORS IN THE 20 GHZ RANGE

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

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### MMIC BASED YIG-TUNED OSCILLATORS WITH BOND WIRE COUPLING OPERATING UP TO 47 GHZ

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

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**POWER-EFFICIENT 173 GHZ DUAL-MODULUS 4/5 PRESCALER WITH OPTIMIZED CLOCK DISTRIBUTION IN 130 NM SIGE:C BICMOS**

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

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**A STUDY ON MOLDING BROADBAND INTEGRATED ANTENNAS FOR A G-BAND RADAR**

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

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**WHEELER CAP METHOD EFFICIENCY ESTIMATION ERRORS AT ANTENNA CHARACTERISTIC MODES**

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

**Session 44** **ICEAA/IEEE APWC**

## Recent advances in measurement techniques for spatially distributed electromagnetic fields - ICEAA/IEEE APWC, Organized by O. Breinbjerg

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**DETERMINATION OF THE SUPERGAIN CRITERION FOR ANTENNAS**

A.D. Yaghjian, Electromagnetics Research, United States

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**DIMENSIONING OF FLAT RADIATING PANELS FOR PLANE-WAVE GENERATION**

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

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**TEST SETUP AND APPROACH TO OBTAIN BISTATIC 2-D REFLECTION PATTERNS OF RECONFIGURABLE INTELLIGENT SURFACES BASED ON MONOSTATIC MEASUREMENTS**

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

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**STANDOFF WEAPON IMAGING USING MM-WAVE INVERSE SYNTHETIC APERTURE RADAR AND AI DETECTION**

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

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**ON THE ACCURACY OF SIMULATION MODELS FOR HOLOGRAPHIC INDOOR IMAGING**

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

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**RECENT ADVANCES IN UNIFIED PHASE RETRIEVAL: FROM FAR-FIELD TO NEAR-FIELD USING A SINGLE MEASUREMENT SURFACE**

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

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**ANTENNA DIAGNOSTICS USING IR THERMOGRAPHY PLANAR PHASELESS NEAR-FIELD MEASUREMENTS**

S. Faure, Anyfields, France; R. Carrizales-Juarez, Anyfields, France; N. Mézières, CNES, France; A. Laffont, Anyfields, France

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**A NOVEL TWO-STEPS APPROACH FOR THE CORRECTION OF 3-D POSITION ERRORS OF THE MEASURING PROBE IN A NON-REDUNDANT SPHERICAL SCANNING**

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

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**ON-THE-FLY SAMPLING OF SPATIAL FIELDS WITH CORRECTION FOR SIGNAL-AVERAGING SMEARING ERROR**

O. Breinbjerg, ElMaReCo, Denmark

**Session 45** **ICEAA**

## Electromagnetic sensing and imaging technologies for health applications - ICEAA, Organized by L. Crocco, R. Cruz Conceição, F. Vipiana

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**EMPIRICAL CALIBRATION METHOD FOR A MULTISTATIC MICROWAVE SENSING SYSTEM**

F. Eashour, University of Manitoba, Canada; S. Pistorius, University of Manitoba, Canada

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**PRELIMINARY ANALYSIS OF MICROWAVE IMAGES OF BREAST CANCER PATIENTS**

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

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**LIVER AND KIDNEY TISSUE PHANTOMS IN HYPERTHERMIA AND MICROWAVE THERMAL ABLATION: A REVIEW**

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

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**RBF BASED ULTRASOUND ALGORITHM FOR GENERATION OF PRIOR INFORMATION IN MW BREAST IMAGING**

S.M. Trudeau, University of Manitoba, Canada; V. Khoshdel, University of Manitoba, Canada; J. LoVetri, University of Manitoba, Canada

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**PRESERVATION OF THE MECHANICAL PROPERTIES OF MULTI MODAL TISSUE MIMICKING PHANTOMS**

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

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**MICROWAVE IMAGING EVALUATION OF PRIOR STRUCTURAL INFORMATION ON THE INVERSION-KERNEL BUILDING APPLY TO A BRAIN STROKE MONITORING SCENARIO**

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

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**USING QUALITATIVE INVERSE SCATTERING TO CO-REGISTER MR IMAGES WITH A MW SYSTEM**

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

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**A MILD DATA-DRIVEN APPROACH FOR BRAIN STROKE MICROWAVE IMAGING**

A. Fedeli, University of Genoa, Italy; C. Estatico, University of Genoa, Italy; A. Randazzo, University of Genoa, Italy

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**GENERATION OF 3D MRI-INTENSITY BREAST IMAGES USING A CLASS CONDITIONAL LATENT DIFFUSION MODEL**

N. Abharian, University of Manitoba, Canada; J. LoVetri, University of Manitoba, Canada; V. Khoshdel, University of Manitoba, Canada

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**MODEL ORDER ESTIMATION OF DEBYE DIELECTRIC SPECTRA: A NUMERICAL COMPARISON**

R. Dima, University of Campania, Italy; M.A. Maisto, University of Campania, Italy; R. Solimene, University of Campania, Italy

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**DIFFERENTIAL PERMITTIVITY MODELING IN BIOLOGICAL PHANTOMS VIA WATER TEMPERATURE CONTROL**

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

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**ADAPTIVE SKULL RECONSTRUCTION PROCEDURE FOR MICROWAVE IMAGING APPLICATIONS**

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

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**IMPLANTABLE RECONFIGURABLE FSS FOR WIRELESS PROTECTION OF IMPLANTABLE CARDIAC DEVICES IN THE ISM BAND**

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

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**MINIATURIZED DUAL-BAND IMPLANTABLE ANTENNA FOR CONTROLLED DRUG DELIVERY**

Y. Ding, King's College London, United Kingdom; P. Kosmas, National Center for Scientific Research “Demokritos”, Greece

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**BONE REGENERATION MONITORING USING ELECTROMAGNETIC IMAGING AND MAGNETIC SCAFFOLDS: ROLE OF THE ANTENNA ARRAY SIZING**

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

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**PRECLINICAL TESTING PROCEDURE FOR ULTRA-WIDEBAND MICROWAVE BREAST SCANNER**

A. Prokhorova, Technische Universität Ilmenau, Germany; B. Faenger, Jena University Hospital, Germany; I. Hilger, Jena University Hospital, Germany; M. Helbig, Technische Universität Ilmenau, Germany

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**SKIN-MIMICKING PHANTOM FOR NEAR-BODY ANTENNA CHARACTERIZATION**

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

**Session 46** **ICEAA**

## Fast and efficient solvers and stable discretizations - ICEAA, Organized by F. Andriulli

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**NEAR-FIELD CURVED-BEAM RADIATION THROUGH RAY-CAUSTIC SYNTHESIS AT MICROWAVES AND MILLIMETER WAVES**

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

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**INVESTIGATION OF A FAST FOURIER TRANSFORM ACCELERATED INTERPOLATORY H^2-METHOD FOR THE ELECTRIC FIELD INTEGRAL EQUATION**

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

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**PRECONDITIONING OF MIXED SYSTEMS OF SURFACE INTEGRAL AND SURFACE DIFFERENTIAL EQUATIONS**

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

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**STABLE SOLUTIONS OF TIME-DOMAIN INTEGRAL EQUATIONS FOR TRANSIENT ELECTROMAGNETIC PROBLEMS WITH BODIES OF REVOLUTION**

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

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**FAST INVERSE DESIGN USING THE PRECOMPUTED NUMERICAL GREEN FUNCTION METHOD**

J. Sun, University of Southern California, United States; C. Sideris, University of Southern California, United States

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**TOWARD THE DESIGN OF THE GLOBAL MULTI-TRACE VOLUME-SURFACE VECTOR-POTENTIAL INTEGRAL EQUATIONS IN INHOMOGENEOUS DIELECTRIC MEDIA**

P. Olyslager, Ghent University, Belgium; H. Rogier, Ghent University, Belgium; K. Cools, Ghent University, Belgium

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**FULL WAVE INDOOR PROPAGATION MODELING BASED ON GENERAL GREEN'S FUNCTION METHOD OF MOMENTS**

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

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**ON THE USE OF GENERALIZED RWG BASIS FUNCTIONS FOR CURVATURE FIDELITY IN H-REFINEMENT METHODS**

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

**Session 47** **ICEAA**

## Beam methods and phenomena in the frequency and time domains - ICEAA, Organized by T. Melamed

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**THE UWB PHASE-SPACE BEAM-SUMMATION EXPANSION IN A NON-UNIFORM BACKGROUND**

E. Heyman, Tel Aviv University, Israel

PDF

**REPRESENTATION OF ELECTROMAGNETIC FIELDS BY MEANS OF SPIN SPHERICAL WAVELETS**

A. Chabory, ENAC, France; A. Quennelle, Formerly with ENAC lab, now with Thales Six GTS, France

PDF

**NEW METHODS TO REDUCE ERRORS IN PRECISION POLARIMETRY**

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

PDF

**FOCUSING BY LEAKY-WAVE BESSEL-BEAM LAUNCHERS: PRINCIPLES, DESIGN, AND APPLICATIONS**

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

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**PULSED CURVED BEAM DESIGN**

T. Melamed, Ben Gurion University of the Negev, Israel

**Session 48** **ICEAA**

## EM protection in intelligent transportation systems - ICEAA, Organized by Y. Wen

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**INVESTIGATION OF THE IMPACT OF CONSTANT MAGNETIC FIELD ON FIXED BALISE**

T.M. Meng, B. Yingjie, G. Zhiqiang, L. Dong, D. Geng, CRSC Research & Design Institute Group Co., Ltd., China

PDF

**APPLICATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN ELECTROMAGNETIC RESEARCH OF HIGH-SPEED MAGLEV TRAINS**

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

PDF

**AI-DRIVEN ADAPTIVE PORT SELECTION FOR FLUID ANTENNA MULTIPLE ACCESS**

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

PDF

**MACHINE LEARNING ACCELERATED NASH EQUILIBRIUM OPTIMIZATION FOR WIRELESS NETWORK RESOURCE ALLOCATION**

Q.C. Shi, Beijing Jiaotong University, China ; Z.L. Yue, Beijing Jiaotong University, China ; J. Ren, Beijing Jiaotong University, China

**Session 49** **ICEAA**

## Mathematical advances in electromagnetics - ICEAA, Organized by P.D. Smith, E. Vynogradova

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**HELICOIDAL MODES IN A COAXIAL LINE WHOSE CROSS-SECTION IS A REGULAR POLYGON**

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

PDF

**WAVE PROPAGATION IN AN INHOMOGENEOUS DIELECTRIC SLAB CONTAINING TWO PLANE-PARALLEL LAYERS SEPARATED BY A GRAPHENE FILM**

E. Smolkin, University of Gävle, Sweden; Y. Shestopalov, University of Gävle, Sweden

PDF

**SCATTERING OF TM- AND TE-PLANE WAVES OBLIQUELY INCIDENT ON SLOTTED PEC CYLINDERS WITH SURFACES PARAMETERIZED BY THE SUPER-ELLIPSE EQUATION**

E.D. Vinogradova, Macquarie University, Australia

PDF

**REGULARIZED SOLUTION OF 2D SCATTERING FROM IMPEDANCE-LOADED CAVITIES: THE TE-CASE**

P.D. Smith, Macquarie University, Australia; E.D. Vinogradova, Macquarie University, Australia

**Session 50** **ICEAA**

## 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

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### TOWARDS DETECTING THE AREA COVERED BY TEPHRA FALLOUT COMBINING GROUND-BASED AND SATELLITE-BASED SENSORS

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

PDF

### A FEASIBILITY STUDY ON OPPORTUNISTIC TROPOSPHERIC SENSING FOR METEOROLOGICAL AND GEOPHYSICAL APPLICATIONS USING MICROWAVE SATELLITE DOWNLINKS

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

PDF

### RELATIVE SEA LEVEL RISE PROJECTIONS UP TO 2150 ALONG THE ITALIAN COASTS FROM GEODESY, HIGH RESOLUTION TOPOGRAPHY AND CLIMATIC PROJECTIONS

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

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### LIGHTWEIGHT ARCHITECTURES FOR BINARY SEGMENTATION OF FRESH MUD DEPOSITS IN UAV IMAGERY

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

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### INTEGRATING SATELLITE AND GROUND-BASED DATA FOR MONITORING VOLCANIC UNREST: THE 2021-2022 UNREST IN VULCANO

F. Spina, INGV-OE, Italy; G. Bilotta, INGV-OE, Italy; I.S. Diliberto, INGV, Italy; G. Ganci, INGV-OE, Italy

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### VOLCANIC ASH SIZE AND MASS ESTIMATED BY SATELLITE PASSIVE RADIOMETERS: A COMPARISON BETWEEN TWO RADIATIVE TRANSFER MODELS

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

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**LEVERAGING COPERNICUS EMERGENCY CORE SERVICE PRODUCTS TO SUPPORT NATIONAL INSTITUTIONS IN EARTHQUAKE EMERGENCY MANAGEMENT**

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

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**THE PEOS E-INFRASTRUCTURE PROTOTYPE: NATURAL HAZARD MONITORING THROUGH EARTH OBSERVATION FROM SPACE**

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

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**THE ECONOMIC IMPACT OF IONOSPHERIC SCINTILLATIONS ON PRECISION AGRICULTURE IN BRAZIL: THE CASE OF SUGARCANE AND SOYBEAN INDUSTRIES**

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

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**NOWCASTING VOLCANIC ASH CLOUDS COMBINING DEEP LEARNING AND GEOSTATIONARY SATELLITE DATA**

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

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**RELAYING VOLCANIC PLUME MEASUREMENTS IN REAL TIME BY USING A BALLOON-BORNE MULTI-GAS AND PARTICLES SENSORS SYSTEM**

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

**Session 51** **ICEAA**

## Advances in time and frequency domain methods - ICEAA, Organized by F. Erden, H.A. Ülkü, E. Basaran

PDF

### EVALUATION OF THE TIME DOMAIN EQUIVALENT EDGE CURRENTS RADIATION INTEGRAL FOR NURBS EDGES

A. Aktepe, Aselsan Inc., Turkey; H. A. Ulku, Yeditepe University, Turkey

PDF

### FAST MULTIPOLE METHOD IMPLEMENTATION OF EXTENDED BOUNDARY CONDITION METHOD FOR WAVE SCATTERING BY DIELECTRIC CYLINDERS

M.E. Hatipoglu, Gebze Technical University, Turkey; F. Dikmen, Gebze Technical University, Turkey

PDF

### EXTENDED BOUNDARY CONDITION METHOD FOR WAVE SCATTERING BY DIELECTRIC CYLINDERS IN PLANAR LAYERED MEDIUM

M.E. Hatipoglu, Gebze Technical University, Turkey; F. Dikmen, Gebze Technical University, Turkey; A. Alparslan, Trakya University, Turkey

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### 3-LEVEL DISCRETE COMPLEX IMAGES METHOD FOR THE FAST AND ACCURATE ANALYSIS OF 2-D LAYERED GEOMETRIES

A. Alparslan, Trakya University, Turkey

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### ZENNECK SURFACE WAVE EXCITATION IN FDTD METHOD

E. Basaran, Yeditepe University, Turkey; H. A. Ulku, Yeditepe University, Turkey; A. A. Ergin, Bahcesehir University, Turkey

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### A NEW LOOK AT ANALYTICAL ABSORBING BOUNDARY CONDITIONS IN THE FDTD METHOD

T. P. Stefanski, Gdansk University of Technology, Poland; J. Gulgowski, University of Gdansk, Poland; K.L. Tsakmakidis, National and Kapodistrian University of Athens, Greece

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### GENERALIZED REFORMULATION OF MAXWELL'S EQUATIONS FOR TIME-DOMAIN ELECTROMAGNETIC SIMULATIONS

F. Erden, National Defence University, Turkish Naval Academy, Turkey

**Session 52** **ICEAA**

## Electromagnetic measurements - ICEAA

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### TIME-FREQUENCY DOMAIN FILTERING METHOD FOR OPTICAL DOWN-CONVERSION ELECTRIC FIELD MEASUREMENT

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

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**A SINGLE-CHANNEL BLIND SOURCE SEPARATION METHOD FOR DOWN-CONVERTED ALIASED SIGNALS BASED ON TIME-FREQUENCY MAP PREPROCESSING**

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

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**SENSOR NETWORK FOR THE ASSESSMENT OF SPATIOTEMPORAL DYNAMICS OF THE ENVIRONMENTAL EXPOSURE OF ADAPTIVE ANTENNAS**

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

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**A UAV-BASED FAR-FIELD MEASUREMENT SYSTEM FOR HF ANTENNAS**

J.L. He, Southeast University, China ; Z.X. Cao, Southeast University, China

PDF

**HIGH FREQUENCY CHARACTERIZATION OF ULTRA-THIN TRANSPARENT FILMS**

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

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**SUSTAINABLE BIOCHAR COATED DRYWALL WITH ELECTROMAGNETIC SHIELDING PROPERTIES**

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

**Session 53** **ICEAA**

## Reconfigurable Metasurfaces: Theory, Design and Applications - ICEAA, Organized by G. Manara, F. Costa

PDF

**TOWARD RECONFIGURABLE PLASMA-BASED METASURFACES: EXPERIMENTAL CHARACTERIZATION VIA ELECTRICAL AND WAVEGUIDE MEASUREMENT TECHNIQUES**

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

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**EFFECT OF PHASE QUANTIZATION ON SHAPED NEAR-FIELD PATTERNS IN RECONFIGURABLE INTELLIGENT SURFACE**

A.F. Vaquero, Universidad de Oviedo, Spain; S.M. Feito, Universidad de Oviedo, Spain; M. Arrebola, Universidad Politécnica de Madrid, Spain

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**SYSTEM-LEVEL SIMULATIONS FOR RIS APPLICATIONS IN REALISTIC THZ-COMMUNICATIONS SCENARIOS**

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

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**RECONFIGURABLE METASURFACES FOR SATCOM AND 5G.**

S. Maci, University of Siena, Italy

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**SUB-100 MS RESPONSE TIMES IN LIQUID CRYSTAL RECONFIGURABLE INTELLIGENT SURFACES VIA THE DELAY-LINE ARCHITECTURE**

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

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**GREEN'S FUNCTION OF METASURFACE-ASSISTED CAVITIES**

A. Torabi, University of Surrey, United Kingdom; G. Gradoni, University of Surrey, United Kingdom

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**MODAL ANALYSIS OF ALL-METAL WAVEGUIDES WITH GLIDE-SYMMETRIC LOADING**

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

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**DESIGN OF LOW-PROFILE SCANNING TRANSMITARRAYS BY VIRTUAL FOCUS SYNTHESIS**

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

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**ASSESSMENT OF "REDUCED BASIS" FORMULATIONS FOR ELECTROMAGNETIC FINITE ELEMENT TEARING AND INTERCONNECTING (FETI) FREQUENCY SWEEPS SIMULATIONS OF LARGE RECONFIGURABLE TRANSMIT ARRAYS ANTENNAS**

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

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**SPACE-TIME MODULATED METASURFACE-BASED EM TAGS FOR CODING CAPACITY ENHANCEMENT**

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

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**RECONFIGURABLE ORIGAMI NONLOCAL SCATTERER FOR ANALOG COMPUTING**

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

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**MODAL ANALYSIS AND DEMONSTRATION OF INHOMOGENEOUS RECONFIGURABLE METASURFACE-LOADED BEAM SCANNING VERTICAL-POLARIZED ANTENNAS**

M. Bie, Z.H. Jiang, Southeast University, China

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**THEORETICAL EVALUATION OF THE COMPLEX SCATTERED FLOQUET HARMONICS IN THE CANONICAL PROBLEM OF ANOMALOUS REFLECTION**

F. Giusti, University of Siena, Italy; E. Martini, University of Siena, Italy; S. Maci, University of Siena, Italy; M. Albani, University of Siena, Italy

**Session 54** **ICEAA**

## Method of moments for array-related problems - ICEAA, Organized by C. Craeye, M. Botha

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**DOMAIN DECOMPOSITION ANALYSIS OF OPEN-CAVITY-BASED ARRAY ELEMENTS — ROADMAP TOWARD ANALYZING LARGE-SCALE REFLECTARRAYS AND RECONFIGURABLE INTELLIGENT SURFACES**

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

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**A CALDERON PRECONDITIONER FOR LARGE GROUND PLANES WITH ARBITRARY CONTOURS**

A. Abazi, Université Catholique de Louvain (UCLouvain), Belgium; J. Cavillot, Université Catholique de Louvain (UCLouvain), Belgium; C. Craeye, Université Catholique de Louvain (UCLouvain), Belgium

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**STUDY OF FAR-FIELD PIVOTS IN THE ACA ALGORITHM WITH ARRAY ANALYSIS APPLICATION**

K. Sewraj, Université des Mascareignes, Mauritius; M.M. Botha, Stellenbosch University, South Africa

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**INVESTIGATING ACTIVE IMPEDANCE IN ARRAYS WITH VARYING SIZE USING ACCELERATED MOM**

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

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**PRELIMINARY ARRAY ANALYSIS RESULTS WITH A NEW SEMI-REDUCED SOLVER CONCEPT**

A.S. Conradie, Stellenbosch University, South Africa; P.I. Cilliers, Stellenbosch University, South Africa; M.M. Botha, Stellenbosch University, South Africa

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**FAST SCATTERING ANALYSIS OF LARGE OPEN-CAVITY BASED REFLECTARRAYS USING A HYBRID METHOD OF MOMENT AND PHYSICAL OPTICS APPROACH**

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

**Session 55** **ICEAA**

## Numerical methods for transient wave scattering - ICEAA, Organized by A. Zuccotti, K. Cools

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**COMBINING FDTD AND KIRCHHOFF INTEGRATION WITH BACK-PROPAGATION FOR REFLECT-ARRAYS DESIGN**

G. Junkin, The Autonomous University of Barcelona, Spain

PDF

**IMPACT OF TIME STEP SCALING IN TDIE MOT-JVIE FOR METASURFACE ANALYSIS**

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

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**MULTI-CLASS LOCAL TIME-STEPPING STRATEGY FOR MULTI-METHODS/ MULTI-DOMAINS SCHEMES TO SOLVE TIME DOMAIN MAXWELL'S EQUATIONS**

X. Ferrière, L.M. Mazzolo, N.A. Messai, ONERA, France;

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**TLM METHOD WITH NON-ORTHOGONAL HEXAHEDRAL MESHING WITH UNCONDITIONAL STABILITY**

A. Ijjeh M. Cueille, A. Debard, J. Dubard, LEAT laboratory, university of cote d'azur, France; M. NEY, IMT-atlantique/Lab-STICC, France

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**EXACT EVALUATION OF TD-BEM MATRIX ENTRIES FOR SCALAR WAVE SCATTERING OVER MESHES CONTAINING PARALLEL ENTITIES**

A. Zuccotti, Ghent university, Belgium; K. Cools, Ghent university, Belgium

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**A STUDY ON ELECTROMAGNETIC TRANSIENT ANALYSES BASED ON FAST INVERSE LAPLACE TRANSFORM AND DISCRETE INVERSE FOURIER TRANSFORM**

K. Watanabe, Fukuoka Institute of Technology, Japan

**Session 56** **ICEAA**

## Modeling and characterization of thin film, ferroelectric and phase-change materials for RF devices - ICEAA, Organized by L. Pierantoni, D. Mencarelli

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**MIM DIODES BASED ON DIELECTRIC HFO2 AND ZRO2: A COMPARATIVE ATOMISTIC ANALYSIS**

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

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**ELECTRONIC PROPERTIES OF BARE AND VANADIUM-DOPED MONOLAYER OF WSE2: AN ATOMISTIC STUDY**

E. Laudadio, E. Mohebbi, M. Petroselli, D. Mencarelli, L. Pierantoni, P. Stipa, E. Pavoni, Università Politecnica delle Marche, Italy

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**SPRAY-DEPOSITED GRAPHITE NANOPLATELET METASURFACES FOR CHIPLESS WIRELESS STRAIN SENSING**

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

PDF

**MULTIPHYSICS MODELING OF SPIN DIODE UNDER THE SIMULTANEOUS EXCITATION OF SPIN TRANSFER TORQUE AND STRAIN.**

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

Session 57 IEEE APWC

## Wireless communications - IEEE APWC

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### MOS-BASED ANALYSIS OF AUDIO CODEC PERFORMANCE IN SIMULATED 5G NETWORKS

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

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### ANALYSIS OF SIGNAL COVERAGE AND THROUGHPUT PERFORMANCE WITH BEAM PATTERN VARIATIONS IN PRIVATE 5G BASE STATION ANTENNAS FOR RAILWAY APPLICATIONS

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

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### MASSIVE MIMO IN 5G: CAPACITY TRADE-OFFS BETWEEN OPEN LOOP AND CLOSED LOOP MIMO

C. M. Andras, G. Barb, M. Otesteanu, Universitate Politehnica Timisoara, Romania

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### COMPARATIVE ANALYSIS OF MULTIPLE ACCESS TECHNIQUES: NOMA VS OMA FOR 5G NETWORKS

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

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### COMPARATIVE ANALYSIS OF BATTERY CONSUMPTION IN 5G AND 4G NETWORKS FOR VIDEO STREAMING

C.M. Andras, D. Musteata, R. Neag, Continental Engineering Services, Romania; G. Barb, Universitatea Politehnica Timisoara , Romania

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### RCS SEQUENCE PREDICTION FOR MULTIPLE SCATTERERS BASED ON CHARACTERISTIC MODES

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