

ICEAA 19

International Conference on
**ELECTROMAGNETICS IN
ADVANCED APPLICATIONS**

IEEE APWC 19

IEEE-APS Topical Conference on
**ANTENNAS AND PROPAGATION IN
WIRELESS COMMUNICATIONS**



SEPTEMBER 9-13 2019 GRANADA SPAIN

ICEAA 19

IEEE APWC 19

ORGANIZED BY

POLITECNICO DI TORINO

Universidad de Granada

Universidad Carlos III de Madrid

IEIT-CNR

IN COOPERATION WITH

IEEE Antennas and Propagation Society

URSI, the International Union of Radio Science

Torino Wireless Foundation

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On behalf of the Steering Committee, of the Organizing Committee and of the Scientific Committee, we are glad to welcome all participants to the twenty-first edition of ICEAA and to the ninth edition of IEEE APWC, the IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications. These two conferences share a common organization, registration fee, submission site, workshops and short courses, and social events.

The 2019 edition of ICEAA and IEEE APWC is organized by the Politecnico di Torino, the Universidad de Granada, the Universidad Carlos III de Madrid, and the Institute of Electronics, Computer and Telecommunication Engineering (IEIT-CNR) of the Italian National Research Council.

The combination of these Conferences has a wide scope which includes all kinds of advanced applications in Electromagnetics and new technology developments. Broad areas are covered, ranging from Cognitive Radio to Electromagnetic Compatibility and Intentional Electromagnetic Interference; from Antennas, Propagation, and Components Technologies to Radar Cross Section and Asymptotic Techniques; from Electromagnetic Applications to Biomedicine to Computational Electromagnetics; from Wireless Communications to Metamaterials.

Altogether the two conferences feature 67 sessions including 39 special sessions organized by renowned experts. The ICEAA 2019 Conference program consists of 52 sessions and includes 35 Special Sessions; the IEEE APWC 2019 Conference program consists of 15 sessions, including 4 Special Sessions. About 591 papers are scheduled, out of the 887 submitted. As in previous editions invited papers will be presented at the Conferences, giving recent information on the state of the art and new technologies. We thank the Chair of the ICEAA – IEEE APWC Scientific Committee (Prof. George Uslenghi) and reviewers for their contribution to the review of papers accepted for inclusion in the Conferences.

On Friday morning, September 13, a free half-day Short Course on “Low Rank Matrix Algebra for EM Integral Equations” will be given by Dr. J. Shaeffer of Matrix Compression Technologies, LLC, Marietta, GA, USA.

The Conferences are held at the “Granada Conference and Exhibition Center” which for its design, size and features, it is considered one of the main Conference Centers in Spain.

Don't miss the opportunity to visit the Alhambra and the many other interesting places in Granada and its surroundings: we are sure you will enjoy them.

We look forward to seeing you in Granada in September.

Roberto D. Graglia

Chairman of the ICEAA - IEEE APWC Organizing Committee

Rafael Gómez Martín

Chair of ICEAA - IEEE APWC 2019 Local Organizing Committee

Magdalena Salazar Palma

Co-Chair of ICEAA - IEEE APWC 2019 Local Organizing Committee

DATES AND LOCATION

The conferences will be held from 9th to 13th of September 2019, at the “Granada Conference and Exhibition Centre,” Paseo del Violón, Granada, Spain - see map.

OFFICIAL LANGUAGE

The official language is English. No simultaneous translation will be provided.

PROCEEDINGS

At the registration, each participant will receive a copy of the Conference Proceedings.

ON SITE REGISTRATION FEE

The ICEAA and the IEEE APWC, share a common organization, registration fee, submission site, workshops and short courses, and social events.

On-site registration fees are:

IEEE members: 695,00 Euro (VAT included)

Non-IEEE members: 715,00 Euro (VAT included)

Full registration is required of all participants, including members of the Conference Committees, Session Chairs and Authors.

The registration fee includes attendance to all sessions, luncheons and coffee breaks, Conference Banquet, and participants' briefcase containing the Conference Proceedings and other material.

REGISTRATION DESK

The registration desk will be in the Hall at the 1st floor of the Congress Center. Accompanying persons and late registrants may register, or pre-registrants may pick up conference materials, from Monday to Thursday at the following times: 8:00-17:30. The accompanying person fee is 120,00 Euro and only includes the Conference Banquet.

MEALS AND REFRESHMENTS

Fixed-menu luncheons (from Monday to Thursday) and coffee breaks are included in the registration fee. See staff at the Registration Desk for directions during the Conference.

BANQUET

A banquet will be offered to the participants on Wednesday night, at 8:00 pm at the Carmen de los Chapiteles in Granada. Additional tickets can be purchased from the Registration Desk.

The winner(s) of the 2019 ICEAA - IEEE APWC Awards will be announced at the Banquet.

PARKING

Undercover parkings are available just opposite the Congress Centre.
For further information: <https://www.pcgr.org/en/services/parking/>

AUDIOVISUAL EQUIPMENT

Each meeting room will be equipped with a notebook. The presenting authors will not be allowed to use their personal computer for presentation; only the computer of the meeting rooms can be used for presentation. Authors' presentation files should be in either PowerPoint or PDF format. You must make sure that your presentation contains all of the fonts and any auxiliary or multimedia files needed, and that these files are copied on to the session room computer.

INTERNET CONNECTION

The Conference Centre features WI-FI Internet access.

MESSAGES

During the Conference, messages may be directed to participants via Email to: iceaa@seleneweb.com or iceaa19@iceaa.polito.it
Messages will be posted in front of the Registration desk.

TRANSPORTATION

The Granada Conference and Exhibition Centre is located downtown, within walking distance of most of the accommodation options in Granada. Taxis are often available, otherwise Taxi reservations can be made by calling (+34) 958132323 - <https://radiotaxigenil.com>

Granada "Federico Garcia Lorca" airport is only 13 km from the city centre. In addition to taxis, there is a public shuttle service from the airport to the city. The last stop is at the Granada Conference and Exhibition Centre (Palacio de Congresos). For further information see:
<http://www.aena.es/en/federico-garcia-lorca-granada-jaen-airport/public-transport.html>

WEATHER

In mid-September, the weather in Granada is warm and sunny; temperatures will range from 15-28 degrees Celsius. Occasional showers are possible; therefore, raincoats or umbrellas may be useful.

HOTEL ACCOMMODATIONS

It is advisable to make an early reservation because hotels are subject to availability. A number of hotel rooms in different price categories have been booked for the duration of the Conference. Bookings can be made online at <https://2019.iceaaconference.com/booking.php> or by email to the Hotel booking service: booking@cts.org.es

TOURS & ACTIVITIES

For the latest information on the Accompanying Person Programme and other Social Events please check www.iceaa.net, or refer to the Conference registration desk.

USEFUL ADDRESSES

For technical and scientific aspects:

ICEAA Secretariat

Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino
Corso Duca degli Abruzzi 24, 10129 Torino
Tel. +39-011-090-4000 (-4056, Prof. R.D. Graglia; -4012, Prof. G. Lombardi)
Fax +39-011-090-4015/-4099 - E-mail: iceaa19@iceaa.polito.it

For logistics aspects and hotel reservation:

SELENE s.r.l.(Mrs. Manuela Trinchero) - Via Medici, 23 - 10143 Torino
Tel. +39 011 7499601- Fax +39 011 7499576 - E-mail: iceaa@seleneweb.com

**For logistics aspects and hotel reservation during the Conference,
please see staff at the Registration Desk**

ICEAA - IEEE APWC 2019 YOUNG SCIENTIST AWARD

A certificate and a prize of 800 Euro will be awarded to the young scientist (aged not more than thirty-six as of June 3, 2019) who has authored the best ICEAA or IEEE APWC paper in terms of content and impact on Electromagnetics. The ICEAA – IEEE APWC Scientific Committee reserves the right to make no award if there are no papers of sufficient quality.

The finalists for this Award must present their paper in a special poster session scheduled for Monday afternoon, September 9, 2019, in the coffee-break area near the registration desk. In case of eligible coauthors who are registered participants at ICEAA - IEEE APWC, each awardee will receive a certificate and the cash award will be shared equally among them. The winner(s) of the ICEAA - IEEE APWC 2019 Young Scientist Award will be announced at the Conference Banquet on Wednesday evening, September 11, 2019. Since the award announcement and presentation are made at the Conference Banquet, all candidates are expected to attend it.

ICEAA 2019 INDUSTRIAL ENGINEERING PAPER AWARD

This award is sponsored by the IEEE AP-S Industrial Initiatives Committee. A certificate and a prize of 500 Euro will be awarded to the authors of the most innovative paper in terms of practical, industrial engineering related to the fields of antennas, electromagnetics and propagation. The finalists for this Award must present their paper in a special poster session scheduled for Monday afternoon, September 9, 2019, in the coffee-break area near the registration desk. In case of eligible co-authors who are registered participants at ICEAA, each awardee will receive a certificate and the cash award will be shared equally among them. Since the award announcement and presentation are made at the ICEAA - IEEE APWC banquet, all candidates are expected to attend the banquet.

MONDAY SEPTEMBER 09, 2019

BREAKING LORENTZ RECIPROCITY USING METAMATERIALS

Prof. Andrea Alù CUNY Advanced Science Research Center, Photonics Initiative

85 St. Nicholas Terrace, New York, NY 10031, U.S.A.
aalu@gc.cuny.edu, <http://users.ece.utexas.edu/~aalu>

Abstract - In this talk, I discuss our recent research activity in electromagnetics, nano-optics and acoustics, showing how tailored meta-atoms and suitable arrangements of them open exciting venues to realize non-reciprocal devices for light, radio-waves and sound, largely breaking Lorentz reciprocity and realize isolation without the need of a magnetic bias. Our approaches are based on using suitably tailored mechanical motion, spatio-temporal modulation, and nonlinearities in coupled resonator systems, and have enabled magnet-free circulators and isolators for sound, microwaves, THz and optical frequencies, non-reciprocal antennas, emitters and absorbers breaking Kirchhoff's law, self-induced isolation for high-intensities triggered by nonlinearities, and a new generation of non-reciprocal topological insulators for light, sound, and static systems in mechanics. In the talk, I will also discuss the impact of these concepts from basic science to practical technology, and some of their inherent limitations stemming from thermodynamics, specifically in the context of nonlinear isolators and of the delay-bandwidth limit.



Biography - Andrea Alù is the Founding Director and Einstein Professor at the Photonics Initiative, CUNY Advanced Science Research Center. He received his Laurea (2001) and PhD (2007) from the University of Roma Tre, Italy, and, after a postdoc at the University of Pennsylvania, he joined the faculty of the University of Texas at Austin in 2009, where he was the Temple Foundation Endowed Professor until Jan. 2018. Dr. Alù is a Fellow of IEEE, OSA, SPIE and APS, and he currently serves as IEEE AP-S Distinguished Lecturer and AdCom member. He has received several scientific awards, including the ICO Prize in Optics (2016), the NSF Alan T. Waterman award (2015), the OSA Adolph Lomb Medal (2013), and the URSI Issac Koga Gold Medal (2011).

MONDAY SEPTEMBER 09, 2019

MICROWAVE METANTENNAS: WAVE CONTROL USING METAMATERIALS, METASURFACES, AND METALINES

Prof. Zhi Ning Chen Department of ECE, National University of Singapore

Abstract - The physical concepts of metamaterials have revolutionarily reshaped electromagnetic research from microwave, terahertz to optics since later 1990s. With more and more exciting scientific findings, the next wave of metamaterials is to fuel the innovation of electromagnetic engineering for applications. In particular, the metamaterials is expected to spur the development of innovative antenna technology to meet the fast increasing demands in the market of wireless communications and radars. This talk will brief the unique electromagnetic properties. Then the unique changes of antenna design will

be addressed. After that the development of metamaterial-based antenna technologies will be reviewed with the success stories of translational research of metamaterials, metasurfaces and metalines by speaker's team. Last speaker will comment on the development of metantennas in future.



Biography - Zhi Ning Chen received his BEng, MEng, and PhD degrees all in Electrical Engineering from the Institute of Communications Engineering (ICE), China and his second PhD degree from the University of Tsukuba, Japan, respectively. During 1988~1995, he worked as a Lecturer and later an Associate Professor at ICE as well as a Postdoctoral Fellow and later an Associate Professor at Southeast University, China.

During 1995~1997, he joined the City University of Hong Kong as a Research Assistant and later a Research Fellow. In 1997, he was awarded the Japan Society for the Promotion of Science (JSPS) Fellowship to conduct his research at the University of Tsukuba, Japan. In 2001 and 2004, he visited the University of Tsukuba under the JSPS Fellowship Program (at a senior level). In 2004, he worked as an Academic Visitor at IBM T. J. Watson Research Center, USA. In 2013, he visited "Laboratoire des Signaux et Systèmes", UMR8506 CNRS-Supelec-University Paris Sud in Gif-sur-Yvette, France as a Senior DIGITEO Guest Scientist. During 1999~2016, he worked with the Institute for Infocomm Research (I2R) as Principal Scientist, Head for RF & Optical Department, and Technical Advisor. In 2012, he joined the Department of Electrical and Computer Engineering, National University of Singapore as a tenured Full Professor and now Program Director (Industry). He is holding/held the concurrent guest professorships at Southeast University (Changjiang Chair Professor), Nanjing University, Tsinghua University, Shanghai Jiaotong University, Tongji University, University of Science and Technology of China, Fudan University Dalian Maritime University, Chiba University, National Taiwan University of Science and Technology, Shanghai University, Beijing University of Posts and Telecommunications, Tohoku University, Beijing Institute of Technology, and City University of Hong Kong. He is also serving as the members of State Key Laboratory of Millimeter-waves at Southeast University and City University of Hong Kong. Dr Chen is the founding General Chairs of International Workshop on Antenna Technology (IWAT in 2005), International Symposium on InfoComm & Mechatronics Technology in Bio-Medical & Healthcare Application (IS 3Tin3A in 2010), International Microwave Forum (IMWF in 2010), and Asia-Pacific Conference on Antennas and Propagation (APCAP in 2012). He also involved many international events as General Chairs, Chairs and members for technical program committees and international advisory committees. He has been invited to deliver 80+ keynote/plenary/invited speeches at international academic and industry events. Currently Dr. Chen is interested in electromagnetic engineering and antennas/sensors for communication, radar, imaging and sensing systems. He has published 610+ academic papers and five books entitled Broadband Planar Antennas (Wiley 2005), UWB Wireless Communication (Wiley 2006), Antennas for Portable Devices (Wiley 2007), Antennas for Base Stations in Wireless Communications (McGraw-Hill 2009), and Handbook of Antenna Technologies with 76 chapters (by Springer References in 2016 as an Editor-in-Chief). He has also contributed the chapters to the books entitled UWB Antennas and Propagation for Communications, Radar, and Imaging (Wiley 2006), Antenna Engineering Handbook (McGraw-Hill 2007), Microstrip and Printed Antennas (Wiley 2010), and Electromagnetics of Body Area Networks (Wiley 2016). He is holding 27 granted/ filed patents with 38 licensed deals with industry. He is the recipient of International Symposium on Antennas and Propagation Best Paper Award 2010, the CST University Publication Awards 2008 & 2015, ASEAN Outstanding Engineering Achievement Award 2013, Institution of Engineers Singapore Prestigious Engineering Achievement Awards 2006, 2013(two project awards), and 2014, I2R Quarterly Best Paper Award 2004, IEEE IWAT 2005 Best Poster Award, several technology achievement awards from China during 1990-1997 as well as more than 21 academic awards by the students he supervised. Dr. Chen elevated a Fellow of the IEEE for the contribution to small and broadband antennas for wireless applications in 2007. He has served IEEE Council on RFID as a Vice President and a Distinguished Lecturer since 2015. He severed IEEE Transaction on Antennas and Propagation as an Associate Editor and IEEE Antennas and Propagation Society as a Distinguished Lecturer.

*PLEASE CHECK THE DETAILED PROGRAM IN THE FOLLOWING PAGES

FRIDAY SEPTEMBER 13, 2019

FREE SHORT COURSE ON LOW RANK MATRIX ALGEBRA FOR EM INTEGRAL EQUATIONS

Dr. John Shaeffer

Matrix Compression Technologies, LLC

Marietta, Georgia 30067, USA

john@shaeffer.com

On Friday morning, September 13, a free half-day Short Course on “Low rank matrix algebra for EM Integral Equations” will be given by Dr. John Shaeffer of Matrix Compression Technologies, LLC Marietta, Georgia 30067, USA. The short course is free for the Conference registrants. Participants may register for this short course at the conference registration desk.

This course is intended as an introduction to low rank block matrix factorization methods for Method of Moments (MOM) frequency domain integral equations. Such methods and variations have enabled direct factorization LU solutions on inexpensive PC workstation class computers for problem sizes well over one million unknowns.

The original limitation of MOM formulations is the operations count tyranny of N^2 for matrix fill, N^3 for LU factorization and N^2 for solving each right-hand side (monostatic scattering can easily have 10,000 or more angles).

Problem size increase over the last 50 years is partly due to Moore's Law in computer technology. However, the main contributor in the last dozen years is the realization that with spatial grouping of unknowns, the interactions of such groups are of low rank. In particular, the introduction of the Adaptive Cross Approximation (ACA) led to our ability to compute sparse low rank blocks of the system matrix and of its LU block factors.

COURSE TOPICS WILL INCLUDE:

- What is low rank? How it is determined? How it is measured?
- How do we know if a matrix block is R_k
- Spatial grouping using the Cobblestone approach
- Adaptive Cross Approximation (ACA)
- SVD approximation is lower rank than ACA
- Recompression: QR & SVD
- Thrill of R_k multiplication
- Agony of R_k addition
- ACA for computing R_k sums
- LU block factorization using R_k matrices
- RHS monostatic forcing function in R_k form
- LU solve using R_k matrices and the R_k form for the current solution J
- Computation of the polarization scattering matrix using the R_k forms of solutions J and row matrix R .

ROOM FALLA

9:00-10:00

FORMAL OPENING

10:20-11:00

PLENARY ADDRESS BY ANDREA ALÙ

CUNY Advanced Science Research Center-Photonics Initiative, New York, NY, USA

BREAKING LORENTZ RECIPROCITY USING METAMATERIALS

11:00-11:40

PLENARY ADDRESS BY ZHI NING CHEN

Department of Electrical and Computer Engineering, National University of Singapore, Singapore

MICROWAVE METANTENNAS: WAVE CONTROL USING METAMATERIALS, METASURFACES AND METALINES

ROOM FALLA

11.40-15.00

SESSION 1 IEEE APWC

SIGNAL PROCESSING ANTENNAS AND ARRAYS

Chairs: J.A. Encinar, E. Carrasco

15.00-18.40

SESSION 2 ICEAA

Organized by J.A. Encinar, E. Carrasco

SPACIALLY FED ARRAYS: REFLECTARRAYS, TRANSMITARRAYS AND PERIODIC STRUCTURES

Chairs: J.A. Encinar, E. Carrasco

ROOM ANDALUCIA 3

11.40-15.00

SESSION 3 ICEAA

Organized by T.K. Sarkar

ELECTROMAGNETIC AND INFORMATION THEORY

Chairs: M. Salazar-Palma, T.K. Sarkar

15.00-18.40

SESSION 4 ICEAA

Organized by L. Klincenbusch, T. Weiland

TIME-DOMAIN METHODS

Chairs: L. Klincenbusch, T. Weiland

ROOM ANDALUCIA 2

11.40-15.40

SESSION 5 ICEAA

Organized by A. Alù

ADVANCES IN ELECTROMAGNETIC METAMATERIALS

Chairs: A. Alù, A. Grbic

16:20-18:40

SESSION 6 IEEE APWC

ANTENNAS - IEEE APWC

Chairs: T. Bird, T.K. Sarkar

ROOM ANDALUCIA 1

11:40-12:40

SESSION 7 IEEE APWC

DOA ESTIMATION

Chairs: D.I.L. de Villiers, A. Gorbunova

14.00-18.20

SESSION 8 ICEAA

Organized by F.P. Andriulli

COMPUTATIONALLY EFFICIENT SOLVERS AND STABLE DISCRETIZATIONS

Chairs: F.P. Andriulli, A. Merlini, L. Rahmouni

ROOM SEMINARS 3-4-5

11.40-15.00

SESSION 9 ICEAA

ELECTROMAGNETIC THEORY AND EDUCATION

Chairs: H. Shirai, R. Sato

15.00-18.40

SESSION 10 ICEAA

Organized by H. Shirai

RECENT ADVANCEMENT OF ELECTROMAGNETIC THEORY

Chairs: H. Shirai, R. Sato

ROOM SEMINARS 6-7

11.40-17.40

SESSION 11 ICEAA

Organized by D.B. Davidson, D. de Villiers, E. de Lera Acedo

ANTENNA SYSTEMS FOR RADIO ASTRONOMY

Chairs: D.B. Davidson, D. de Villiers, E. de Lera Acedo

17.40-18.40

SESSION 12 ICEAA

RADIO ASTRONOMY (INCLUDING SKA)

Chairs: D.B. Davidson, D. de Villiers, E. de Lera Acedo

ROOM SEMINARS 1-2

11.40-15.00

SESSION 13 ICEAA

Organized by F. Martin

RESONATOR BASED MICROWAVE SENSORS

Chairs: F. Martin, K. Grenier

15.00-18.40

SESSION 14 ICEAA

Organized by M.N. Georgieva-Grosse, G.N. Georgiev

MODERN PROBLEMS OF MATHEMATICAL AND COMPUTATIONAL ELECTROMAGNETICS AND THEIR ADVANCED APPLICATIONS

Chairs: M.N. Georgieva-Grosse, G.N. Georgiev

ROOM FALLA

08.20-18.40
SESSION 15 IEEE APWC
 Organized by H. Nakano
WIDE/MULTI BAND ANTENNAS AND EMERGING ANTENNA TECHNOLOGIES
 Chairs: H. Nakano, M. Krariksh

ROOM ANDALUCIA 3

08.20-17.20
SESSION 16 ICEAA
 Organized by R.D. Graglia, D.R. Wilton
NUMERICAL METHODS IN ELECTROMAGNETICS
 Chairs: R.D. Graglia, D.R. Wilton
 17.20-18.40
SESSION 17 ICEAA
PHASED AND ADAPTIVE ARRAYS
 Chairs: A. Bagheri, H. Kaouach

ROOM ANDALUCIA 2

08.20-11.40
SESSION 18 ICEAA
 Organized by W.E. Amatucci, E. Scime
SIMULATION OF SPACE PLASMA-WAVE INTERACTIONS IN THE LABORATORY
 Chairs: W.E. Amatucci, E. Scime
 11.40-18.20
SESSION 19 ICEAA
 Organized by G. Ganguli
NATURAL AND STIMULATED EMISSIONS IN THE IONOSPHERE AND MAGNETOSPHERE
 Chairs: G. Ganguli
 18.20-19.00
SESSION 20 ICEAA
ELECTROMAGNETIC APPLICATIONS TO NANOTECHNOLOGY
 Chairs: G. Ganguli, L. Rahmouni

ROOM FALLA

08.20-12:40
SESSION 31 IEEE APWC
LOW-PROFILE AND UWB ANTENNAS
 Chairs: T.S. Bird, D. Filipovic
 14.00-18.20
SESSION 32 ICEAA
 Organized by P.D. Smith, J. Arnold, E. Vinogradova
MATHEMATICAL METHODS IN ELECTROMAGNETICS
 Chairs: P.D. Smith, E. Vinogradova

ROOM ANDALUCIA 3

08.20-15.00
SESSION 33 ICEAA
METAMATERIALS AND METASURFACES
 Chairs: A. Epstein, G. Klotz
 15.00-18.20
SESSION 34 ICEAA
 Organized by Z. Shen
NOVEL ANTENNAS AND FREQUENCY-SELECTIVE STRUCTURES
 Chairs: Z. Shen, G. Wen

ROOM ANDALUCIA 2

08.20-11.40
SESSION 35 ICEAA
 Organized by A.V. Kudrin
RADIATION, PROPAGATION, AND SCATTERING OF ELECTROMAGNETIC WAVES IN PLASMAS AND METAMATERIALS
 Chairs: A.V. Kudrin, S.P. Skobelev
 11.40-16.00
SESSION 36 ICEAA
 Organized by I. LaHaie
ADVANCED PROCESSING TECHNIQUES FOR RCS, RADAR IMAGING, AND ANTENNA MEASUREMENT APPLICATIONS
 Chairs: I. LaHaie, M. Moghaddam
 16.20-17.40
SESSION 37 ICEAA
ELECTROMAGNETIC PROPERTIES OF MATERIALS
 Chairs: S. Di Meo, Y. Hao

ROOM ANDALUCIA 1

08.20-15.00
SESSION 21 ICEAA
 Organized by F. Capolino
NOVEL AND COMPLEX ELECTROMAGNETIC PHENOMENA AND APPLICATIONS
 Chairs: F. Capolino
 15.00-17.40
SESSION 22 ICEAA
 Organized by A. Boag, G. Slepyan
ELECTROMAGNETIC PROPERTIES OF NANOSTRUCTURES AND NANOANTENNAS
 Chairs: A. Boag, G. Slepyan
 17.40-18.40
SESSION 23 IEEE APWC
RFID TECHNOLOGIES
 Chairs: E. Cetin, B. Poussot

ROOM SEMINARS 3-4-5

08.20-10.20
SESSION 24 ICEAA
 Organized by Y. Wen
EMC AND SPECTRUM MANAGEMENT IN INTELLIGENT TRANSPORTATION SYSTEMS
 Chairs: Y. Wen, Y. Xiao
 10.40-16.00
SESSION 25 ICEAA
RADAR IMAGING
 Chairs: K. Kikkawa, S. Stephany
 16.20-18.40
SESSION 26 ICEAA
INTEGRAL EQUATION AND FINITE METHODS
 Chairs: O. Franek, S. Poulsen

ROOM SEMINARS 6-7

08.20-10.20
SESSION 27 ICEAA
 Organized by J.A. Russer
STOCHASTIC ELECTROMAGNETIC FIELDS
 Chairs: J.A. Russer
 10.40-12.40
SESSION 28 ICEAA
 Organized by G. Gradoni
CHAOS AND COMPLEXITY IN ELECTROMAGNETISM
 Chairs: G. Gradoni, F. Moglie
 14.00-15.20
SESSION 29 ICEAA
 Organized by J. Guo
ADVANCED BEAMFORMING ANTENNAS
 Chairs: J. Guo, C. Fumeaux
 15.20-18.40
SESSION 30 ICEAA
 Organized by M. Gustafsson, L. Jonsson, D. Sjöberg
OPTIMIZATION TECHNIQUES IN ELECTROMAGNETICS
 Chairs: M. Gustafsson, L. Jonsson, D. Sjöberg

ROOM ANDALUCIA 1

08.20-11.20
SESSION 38 ICEAA
 Organized by Z.N. Chen
PROGRESS IN NEW ANTENNA DESIGNS
 Chairs: Z.N. Chen, Q. Zhang
 11.20-15.20
SESSION 39 ICEAA
 Organized by Y. Shestopalov
INVERSE PROBLEMS, CLOAKING, AND NONLINEAR MEDIA
 Chairs: Y. Shestopalov, L. Matekovits
 15.20-18.20
SESSION 40 ICEAA
TECHNOLOGIES FOR MM AND SUB-MM WAVES
 Chairs: G. Addamo, A. Clemente

ROOM SEMINARS 3-4-5

08.40-17.00
SESSION 41 ICEAA
 Organized by B. Notaros
ADVANCES IN FREQUENCY-DOMAIN CEM TECHNIQUES AND APPLICATIONS
 Chairs: B. Notaros, V. de la Rubia
 17.00-18.00
SESSION 42 IEEE APWC
VEHICULAR ANTENNAS
 Chairs: S. Lenzi, J. Spurek

ROOM SEMINARS 6-7

8:40-12:20
SESSION 43 ICEAA
EMC/EMI/EMP
 Chairs: D. de Villiers, J.F. Vega-Stavro
 14.00-18.00
SESSION 44 ICEAA
ELECTROMAGNETIC APPLICATIONS TO BIOMEDICINE
 Chairs: G. Lazzi, K. Saito

ROOM FALLA

08.20-11.20
**SESSION 45 IEEE APWC
 SMART ANTENNAS
 AND ARRAYS**
 Chairs: A.R. Diewald, P. Mei

11.20-15.20
**SESSION 46 ICEAA
 ADAPTIVE AND
 RECONFIGURABLE ANTENNAS**
 Chairs: R. Berro, P. Meyer

15.20-18.20
**SESSION 47 ICEAA
 INVERSE SCATTERING AND
 REMOTE SENSING**
 Chairs: A. Coatanhay, E. Heyman

ROOM ANDALUCIA 3

08.20-12.20
**SESSION 48 IEEE APWC
 PROPAGATION MODELS**
 Chairs: S. J. Anderson, E. Plouhinec

14.00-18.20
**SESSION 49
 ICEAA**
 Organized by F. Canavero
**NEW TRENDS IN ELECTROMAGNETIC
 MODELING FOR EMC AND SI/PI**
 Chairs: F. Canavero, P. Triverio

ROOM ANDALUCIA 2

08.20-12.00
**SESSION 50 ICEAA
 ELECTROMAGNETIC MODELING
 OF DEVICES AND CIRCUITS**
 Chairs: M.M. Botha, T. Vaupel

12:00-18:00
SESSION 51 ICEAA
 Organized by D. Erricolo, G. Carluccio,
 R. Lattanzi
**RECENT ADVANCES IN
 ELECTROMAGNETICS FOR MRI**
 Chairs: D. Erricolo G. Carluccio,
 R. Lattanzi

ROOM FALLA

08.20-12.20
**SESSION 59 ICEAA
 ELECTROMAGNETIC
 MEASUREMENTS**
 Chairs: D. Guerra Pereda, M. Vakhitov

ROOM ANDALUCIA 3

08.20-11.00
SESSION 60 ICEAA
 Organized by J.-M. Jin, W.-Y. Yin, S. Yan
**MULTIPHYSICS MODELING
 IN ELECTROMAGNETICS**
 Chairs: J.-M. Jin, W.-Y. Yin

11.00-12.40
**SESSION 61 IEEE APWC
 WIRELESS POWER TRANSMISSION
 AND HARVESTING**
 Chairs: A. Niembro-Martin, S. Reza

ROOM ANDALUCIA 2

08.20-11.00
SESSION 62 IEEE APWC
 Organized by J.L. Gomez Tornero, G. Goussetis. A. Georgiadis
**INNOVATIVE ANTENNAS AND
 WIRELESS SYSTEMS FOR
 A SUSTAINABLE AND EFFICIENT
 INTERNET OF THINGS (IOT)**
 Chairs: J.L. Gomez Tornero, G. Goussetis

11.00-12.40
**SESSION 63 ICEAA
 HIGH POWER ELECTROMAGNETICS**
 Chairs: P. Santon, T. Takamatsu

ROOM ANDALUCIA 1

08.20-15.00
**SESSION 52 IEEE APWC
 WIRELESS COMMUNICATIONS
 AND APPLICATIONS**
 Chairs: L. Arjona, S. Saab

15.00-18.20
SESSION 53 ICEAA
 Organized by M.M. Botha, C. Craeye
ANTENNA ARRAY MODELLING
 Chairs: M.M. Botha, C. Craeye

ROOM SEMINARS 3-4-5

08.40-12.40
SESSION 54 ICEAA
 Organized by V. Monebhurrn,
 A. Monorchio, R. Waterhouse
**COMPLEX ELECTROMAGNETICS
 SYTEMS: MODELING, MEASUREMENTS
 AND STANDARDS**
 Chairs: V. Monebhurrn, A. Monorchio,
 R. Waterhouse

14.00-17.40
SESSION 55 ICEAA
 Organized by A. Boag
FAST COMPUTATIONAL METHODS
 Chairs: A. Boag

ROOM SEMINARS 6-7

08.20-09.40
SESSION 56 IEEE APWC
 Organized by P.M. Duarte Cruz,
 R. Caldeirinha
**THE FUTURE OF IOT TECHNOLOGIES
 AND SOLUTIONS**
 Chairs: P.M. Duarte Cruz
 R. Caldeirinha

09.40-12.20
SESSION 57 ICEAA
 Organized by M. Pastorino
**MICROWAVE IMAGING
 AND APPLICATIONS**
 Chairs: M. Pastorino, T. Kallos

14.00-17.40
SESSION 58 ICEAA
 Organized by K. Esselle, L. Matekovits
**EBG-INSPIRED ANTENNAS AND
 MICROWAVE STRUCTURES**
 Chairs: K. Esselle, L. Matekovits

ROOM ANDALUCIA 1

08.20-11.20
SESSION 64 ICEAA
 Organized by A. Basharin, L. Matekovits
**ADVANCED ARCHITECTURES
 SUPPORTING RADIATIONLESS
 ANAPOLE MODES IN
 ELECTRODYNAMICS
 AND NANOPHOTONICS**
 Chairs: A. Basharin, L. Matekovits

11.20-12.40
**SESSION 65 IEEE APWC
 COMMUNICATION
 SATELLITE ANTENNAS**
 Chairs: A. Basharin, L. Matekovits

ROOM SEMINARS 3-4-5

08.20-11.40
**SESSION 66 ICEAA
 ANTENNAS - ICEAA**
 Chairs: P.M. Duarte Cruz,
 R. Caldeirinha

11.40-12.40
**SESSION 67
 IEEE APWC**
 Organized by P.M. Duarte Cruz, R. Caldeirinha
**RADARS & PROPAGATION:
 TECHNOLOGIES, WAVEFORMS
 AND INTERFERENCE ISSUES**
 Chairs: P.M. Duarte Cruz, R. Caldeirinha

ROOM SEMINARS 6-7

8.40-12.40
**FREE HALF DAY
 SHORT COURSE**
**LOW RANK MATRIX
 ALGEBRA FOR EM
 INTEGRAL EQUATIONS**
 Instructor: Ohn Shaeffer
 Matrix Compression Technologies,
 LLC, Marietta, GA, USA

MONDAY SEPTEMBER 9 - 11:40

ROOM FALLA 

SESSION 01 - IEEE APWC

SIGNAL PROCESSING ANTENNAS AND ARRAYS

Chair 1 J.A. Encinar - Chair 2 E. Carrasco

11:40-12:00

A HIGH-PERFORMANCE, FLEXIBLE DATA ACQUISITION LIBRARY FOR RADIO INSTRUMENTS

A. Magro, K. Bugeja, University of Malta, Malta; R. Chiello, University of Oxford, United Kingdom; A. DeMarco, University of Malta, Malta;

12:00-12:20

RECOVERY PERFORMANCE OF LPLQ-ADMM ALGORITHM UNDER SAS IMPULSE NOISE

C. Zhang, M. Yang, D. Hao, Harbin Engineering University, China;

12:20-12:40

PERFORMANCE ASSESSMENT FOR OAM ANTENNA ARRAYS

A.Ž. Ilic, Institute of Physics Belgrade, Serbia; N.M. Vojnović, S.V. Savi, University of Belgrade, Serbia; N. Maletić, E. Grass, IHP – Leibniz-Institut für innovative Mikroelektronik, Germany; M.M. Ilic, University of Belgrade, Serbia;

14:00-14:20

A SHRINKAGE L1-NORM CONSTRAINED LMS ALGORITHM FOR ADAPTIVE SPARSE ARRAY BEAMFORMING

W. Shi, Y. Li, Harbin engineering University, China;

14:20-14:40

VEHICLE TRACKING THROUGH VISION-MILLIMETER WAVE DOPPLER SHIFT FUSION

M. Trullenque Ortiz, H. Groll, E. Zöchmann, C.F. Mecklenbräuker, TU Wien, Austria;

14:40-15:00

IMPLEMENTATION OF 5G BEAMFORMING TECHNIQUES ON CYLINDRICAL ARRAYS

D.G. Riviello, R. Garelo, Politecnico di Torino, Italy;

MONDAY SEPTEMBER 9 - 15:00

ROOM FALLA 

SESSION 02 - ICEAA

SPACIALLY FED ARRAYS: REFLECTARRAYS, TRANSMITARRAYS AND PERIODIC STRUCTURES

Organized by J.A. Encinar, E. Carrasco

Chair 1 J.A. Encinar - Chair 2 E. Carrasco

15:00-15:20

RESISTIVELY LOADED FSS CLAD THERMAL BLANKETS FOR ENHANCED RF SPACE COMMUNICATIONS

G. Goncalves Machado, R. Cahill, V. Fusco, G. Conway, Queens University Belfast, United Kingdom;

15:20-15:40

DESIGN AND EVALUATION OF LIQUID CRYSTAL-BASED PIXELS FOR MILLIMETER AND SUB-MILLIMETER ELECTRICALLY ADDRESSABLE SPATIAL WAVE MODULATORS

G. Perez-Palomino, E. Carrasco, M. Caño-García, R. Hervás, X. Quintana, M.A. Geday, Universidad Politécnica de Madrid, Spain;

15:40-16:00

WIDEBAND BIFOCAL DIELECTRIC TRANSMITARRAY

A. Massaccesi, P. Pirinoli, Politecnico di Torino, Italy;

16:20-16:40

VARIABLE PITCH CROSSED SURFACE RELIEF GRATINGS FOR POINT-OF-CARE SENSING

J. Gomez-Cruz, Y. Bdour, Queen's University, Canada; E. Carrasco, Universidad Politécnica de Madrid, Spain; R.G. Sabat, Royal Military College of Canada, Canada; C. Escobedo, Queen's University, Canada;

16:40-17:00

CROSSPOLAR OPTIMIZATION IN REFLECTARRAY ANTENNAS FOR DBS MISSIONS

D.R. Prado, Heriot-Watt University, United Kingdom; M. Arrebola, M.R. Pino, Universidad de Oviedo, Spain; G. Goussetis, Heriot-Watt University, United Kingdom;

17:00-17:20

DUAL-BAND CAPABILITIES OF THE FOURTH ORDER PHOENIX CELL FOR REFLECTARRAYS ANTENNAS

G. Courtin, R. Gillard, R. Loison, Institut d'Electronique et de Telecommunications de Rennes (IETR), France; D. Bresciani, Thales Alenia Space, France; M. Romier, Centre National d'Etudes Spatiales, France;

17:20-17:40

DUAL-FREQUENCY REFLECTARRAY CELLS TO GENERATE CLOSELY SPACED BEAMS IN ORTHOGONAL CIRCULAR POLARIZATION

D. Martinez de Rioja, Universidad Politécnica de Madrid, Spain; R. Florencio, University of Alcala, Spain; J.A. Encinar, Universidad Politécnica de Madrid, Spain; R.R. Boix, University of Seville, Spain; E. Carrasco, Universidad Politécnica de Madrid, Spain;

17:40-18:00

BANDWIDTH-ENHANCED TERAHERTZ REFLECTARRAY

X. You, C. Fumeaux, W. Withayachumnankul, The University of Adelaide, Australia;

18:00-18:20

MULTI-BEAM TRANSMITARRAY ANTENNAS FOR 5G RADIO ACCESS AT KA-BAND

G. Liu, Chinese Academy of Sciences, China; M.R. Dehghani Kodnoei, ALCAN Systems GmbH, Germany; K.T. Pham, International University, VNU-HCM, Vietnam; E. Motta Cruz, Univ Nantes, D. González-Ovejero, Ronan Sauleau, Univ Rennes, CNRS, France;

18:20-18:40

OPTIMIZATION BY UNIT-CELL ROTATION OF LINEAR-TO-CIRCULAR POLARIZING REFLECTORS FOR MULTIPLE BEAM APPLICATIONS

S. Mercader Pellicer, G. Goussetis, Heriot-Watt University, United Kingdom; D. Bresciani, H. Legay, Thales Alenia Space, France; N.J.G. Fonseca, European Space Agency, Netherlands;

MONDAY SEPTEMBER 9 - 11:40

ROOM ANDALUCIA 3 

SESSION 03 - ICEAA

ELECTROMAGNETIC AND INFORMATION THEORY,

organized by T.K. Sarkar

Chair 1 M. Salazar-Palma - Chair 2 T.K. Sarkar

11:40-12:00

INTRODUCTION

T.K. Sarkar, Syracuse University, NY, United States

12:00-12:20

IMPORTANCE OF THE DISPERSION PRINCIPLES IN SYSTEM DESIGN

M. Salazar Palma, Universidad Carlos III de Madrid, Spain;

12:20-12:40

INFORMATION THEORY IN COMMUNICATIONS SUBSYSTEMS

M. Lagunas, A. Perez-Neira, CTTC, Spain;

14:00-14:20**BLENDING ELECTROMAGNETIC AND INFORMATION THEORY IN ANTENNA SYNTHESIS***M.D. Migliore, University of Cassino and Southern Lazio, Italy;***14:20-14:40****RADIO FREQUENCY CODING***A. Perez-Neira, CTTC, Spain;***14:40-15:00****CONNECTION BETWEEN INFORMATION THEORY AND ELECTROMAGNETICS***T. Sarkar, Syracuse University, NY, United States;*

MONDAY SEPTEMBER 9 - 15:00

ROOM ANDALUCIA 3 **SESSION 04 - ICEAA****TIME-DOMAIN METHODS****Organized by L. Klinkenbusch, T. Weiland**

Chair 1 L. Klinkenbusch - Chair 2 T. Weiland

15:00-15:20**TIME-DOMAIN ANALYSIS OF STOCHASTIC ELECTROMAGNETIC FIELDS BASED ON JEFIMENKO'S EQUATION***J.A. Russer, eV-Technologies, France; M. Haider, Technische Universität München, Germany; A. Baev, Y. Kuznetsov, Moscow Aviation Institute, Russia; P. Russer, Technische Universität München, Germany;***15:20-15:40****WAVEFORM RELAXATION FOR FIELD/CIRCUIT COUPLED PROBLEMS WITH CUTSETS OF INDUCTANCES AND CURRENT SOURCES***I. Cortes Garcia, TU Darmstadt, Germany; J. Pade, HU Berlin, Germany; S. Schöps, TU Darmstadt, Germany; C. Stroh, C. Tischendorf, HU Berlin, Germany;***15:40-16:00****TIME-GATING THE SOURCES IN INVERSE EQUIVALENT SOURCE RECONSTRUCTION PROBLEMS TO ELIMINATE MUTUAL COUPLING EFFECTS***J. Knapp, J. Kornprobst, A. Paulus, T.F. Eibert, Technical University of Munich, Germany;***16:20-16:40****RECURRENT QUANTIFICATION ANALYSIS FOR MODEL REDUCTION OF NONLINEAR TRANSIENT ELECTRO-QUASISTATIC FIELD PROBLEMS***F. Kasolis, D. Zhang, M. Clemens, University of Wuppertal, Germany;***16:40-17:00****COMBINED FIELD/SYSTEM SIMULATIONS OF LOW-FREQUENCY DEVICES IN TIME DOMAIN BASED ON ADAPTIVE NONLINEAR REDUCED ORDER MODELS***N. Weber, E. Lange, S. Reitzinger, S. Zaglmayr, Dassault Systemes Deutschland GmbH, Germany; T. Weiland, Institut für Teilchenbeschleunigung und Elektromagnetische Felder TU Darmstadt, Germany;***17:00-17:40****STATE OF THE ART SIMULATION OF ELECTROMAGNETIC FIELDS IN TIME DOMAIN USING THE FINITE INTEGRATION TECHNIQUE***P. Thoma, Frankfurt University of Applied Sciences, Germany;***17:40-18:00****A STUDY ON MATRIX DERIVATIVES FOR THE SENSITIVITY ANALYSIS OF ELECTROMAGNETIC EIGENVALUE PROBLEMS***R. Schuhmann, P. Jorkowski, Technische Universität Berlin, Germany;***18:00-18:20****QUASISTATIC DARWIN MODEL FIELD FORMULATIONS IN TIME DOMAIN***M. Clemens, University of Wuppertal, Germany; S. Schöps, Technische Universität Darmstadt, Germany;***18:20-18:40****ABSORBING BOUNDARY CONDITION OF FDTD METHOD BASED ON SURFACE EQUIVALENCE THEOREM USING SPHERICAL HARMONICS EXPRESSION***H. Kawaguchi, Muroran Institute of Technology, Japan;*

MONDAY SEPTEMBER 9 - 11:40

ROOM ANDALUCIA 2 **SESSION 05 - ICEAA****ADVANCES IN ELECTROMAGNETIC METAMATERIALS TIME-DOMAIN METHODS****Organized by A. Alù**

Chair 1 A. Alù - Chair 2 A. Grbic

11:40-12:00**ROTATION-INDUCED EFFECTS AND POLARIZABILITY THEORY FOR ROTATING METAMATERIALS OBSERVED IN THEIR REST-FRAME***I. Kozma, B.Z. Steinberg, Tel-Aviv University, Israel;***12:00-12:20****TIME-MODULATED DIPOLES***M.S. Mirmoosa, G. Ptiitcyn, S.A. Tretyakov, Aalto University, Finland;***12:20-12:40****SPACE, TIME AND SPACE-TIME DISCONTINUITIES IN TRANSMISSION LINES: REVIEW***Y. Hadad, Tel-Aviv University, Israel; A. Shlivinski, Ben-Gurion University, Israel;***14:00-14:20****TIME-MODULATED METAMATERIALS AND METASURFACES: DESIGN AND ANALYSIS***A. Grbic, C. Scarborough, F. Salas, Z. Wu, University of Michigan, MN, United States;***14:20-14:40****LINEAR TIME-PERIODIC SYSTEMS WITH EXCEPTIONAL POINTS OF DEGENERACY***H. Kazemj, M.Y. Nada, T. Mealy, A.F. Abdelshafy, F. Capolino, University of California Irvine, CA, United States;***14:40-15:00****HIGHLY DIRECTIVE LEAKY-WAVE ANTENNAS BASED ON PT-SYMMETRIC METASURFACES***M. Hajizadegan, L. Zhu, P.-Y. Chen, University of Illinois at Chicago, IL, United States;***15:00-15:20****ROBUST WAVE TRANSPORT AT SUBWAVELENGTH SCALE WITH CHIRAL METAMATERIALS***B. Orzabayev, N. Kaina, R. Fleury, EPFL, Switzerland;***15:20-15:40****SYNTHESIS AND ENHANCEMENT OF MULTILAYERED METASURFACES BASED ON RIGOROUS ANALYTICAL MODEL INCLUDING NEAR-FIELD INTRALAYER AND INTERLAYER COUPLING***S. Levy, Y. Kerzhner, A. Epstein, Technion-Israel Institute of Technology, Israel;*

MONDAY SEPTEMBER 9 - 16:20

ROOM ANDALUCIA 2 **SESSION 06 - IEEE APWC****ANTENNAS-IEEE APWC**

Chair 1 T. Bird - Chair 2 T.K. Sarkar

16:20-16:40**A BLOCK-SPARSE SET-MEMBERSHIP NLMS ALGORITHM BASED ON HYBRID ZERO-ATTRACTION PENALTY***Z. Jin, Y. Li, Z. Jiang, Harbin Engineering University, China;***16:40-17:00****SLM 3D-PRINTED ACTIVE PHASED ARRAY FOR X-BAND SATELLITE COMMUNICATIONS***H. Oosthuizen, J. Gilmore, Stellenbosch University, South Africa;***17:00-17:20****DESIGN OF A NEW TYPE PHASE SHIFTING ARRAY WITH DUAL RADIATING MODES***J. Yu, J. Cao, X. Zhang, L. Zheng, S. Chen, China Electronics Technology Group Corporation No.38 Research Institute, China;***17:20-17:40****FULLY 3D-PRINTED RFID TAGS BASED ON PRINTABLE METALLIC FILAMENT: PERFORMANCE COMPARISON WITH OTHER FABRICATION TECHNIQUES***R. Colella, F.P. Chietera, L. Catarinucci, University of Salento, Italy; J.F. Salmeron, A. Rivadeneyra, M.A. Carvajal, A.J. Palma, L.F. Capitan-Vallvey, University of Granada, Spain;***17:40-18:00****ANTENNA MODELING BY NEAR FIELD EQUIVALENT SOURCES IN RADIO FREQUENCY INTEROPERABILITY***O. Ronciere, P. Marchand, DGA, France;***18:00-18:20****A MULTI BAND PLANAR INVERTED-F ANTENNA WITH MEANDERED SLOTS FOR MOBILE APPLICATIONS***V. Sai Boddu, S. Chilukuri, Vardhaman College of Engineering, India;***18:20-18:40****COMPACT FOUR ELEMENT DUAL BAND NOTCHED ORTHOGONALLY PLACED UWB ANTENNAS FOR WIRELESS MIMO APPLICATIONS***K. Muzaffar, M. Idrees Magray, Islamic University of Science & Technology, India;*

MONDAY SEPTEMBER 9 - 11:40

ROOM ANDALUCIA 1 **SESSION 07 - IEEE APWC****DOA ESTIMATION**

Chair 1 D.I.L. de Villiers - Chair 2 A. Gorbunova

11:40-12:00**CYCLOSTATIONARY SOURCES LOCALIZATION IN WIRELESS MULTIPATH ENVIRONMENT***A. Gorbunova, A. Denisov, M. Konovalyuk, A. Baev, Y.V. Kuznetsov, Moscow Aviation Institute, Russia;***12:00-12:20****PRACTICAL PERFORMANCE OF REGULAR SPARSE ARRAY DIRECTION OF ARRIVAL ESTIMATION IN 1-D***D.I.L. De Villiers, R. Louw, R. Weideman, Stellenbosch University, South Africa; A. Cuyt, F. Knaepkens, Antwerp University, Belgium; W.-S. Lee, Stirling University, United Kingdom;***12:20-12:40****MIMO-SPARSE RADARS FOR ENHANCED DOA ESTIMATION OF SPATIO-TEMPORAL CORRELATED SOURCES***N. Amani, Chalmers University of Technology, Sweden; V. Roy, A. Filippi, NXP semiconductors, Netherlands; R. Maaskant, Chalmers University of Technology, Sweden;*

MONDAY SEPTEMBER 9 - 14:00

ROOM ANDALUCIA 1 **SESSION 08 - ICEAA****COMPUTATIONALLY EFFICIENT SOLVERS AND STABLE DISCRETIZATIONS****Organized by F.P. Andriulli**

Chair 1 F.P. Andriulli - Chair 2 A. Merlini, L. Rahmouni

14:00-14:20**CONDITIONING OF GENERALIZED SOURCE INTEGRAL EQUATION FORMULATIONS***A. Sharshesky, Tel Aviv University, Israel; Y. Brick, Ben-Gurion University of the Negev, Israel; A. Boag, Tel Aviv University, Israel;***14:20-14:40****EFFICIENT MATRIX FILLING FOR A VOLUME-SURFACE INTEGRAL EQUATION METHOD***X.J. Li, J. Hu, Y.P. Chen, L. Lei, M. Jiang, Z. Rong, The University of Electronic Science and Technology of China, China;***14:40-15:00****FAST ITERATIVE SOLVER BASED ON THE MULTILEVEL NONUNIFORM GRID APPROACH FOR PROBLEMS OF ACOUSTIC SCATTERING BY ELASTIC SHELLS***E.V. Chernokozhin, Tel Aviv University, Israel; A. Tsinovoy, Rafael Advanced Defence Systems Ltd., Israel; A. Boag, Tel Aviv University, Israel;***15:00-15:20****A DISCRETISATION METHOD FOR THE ELECTRIC FIELD INTEGRAL EQUATION USING THE HDIV INNER PRODUCT WITHOUT THE BARYCENTRIC REFINEMENT***K. Niino, N. Nishimura, Kyoto University, Japan;***15:20-15:40****SOME INVESTIGATIONS ON APPLYING DEEP LEARNING TECHNIQUES TO SOLVE PARTIAL DIFFERENTIAL EQUATIONS***M. Li, T. Shan, F. Yang, S. Xu, Tsinghua University, China;***15:40-16:00****LEAST SQUARES METHOD WEIGHTED DOMAIN DECOMPOSITION METHOD WITH ARBITRARY OVERLAPPING OF SUBDOMAINS FOR SCATTERING FROM LARGE PLATFORMS***M. Tasic, B. Kolundzija, University of Belgrade Serbia;***16:20-16:40****TEAR AND INTERCONNECT DOMAIN DECOMPOSITION ANALYSIS OF PIECEWISE PENETRABLE STRUCTURES***V.F. Martin, J.M. Taboada, University of Extremadura, Spain; D.M. Solis, University of Pennsylvania, PA, United States; D. Larios, University of Extremadura, Spain; F. Obelleiro, University of Vigo, Spain;***16:40-17:00****BLOCK MESHING TLM BASED APPROACH FOR LOW FREQUENCY ANTENNAS CHARACTERIZATION***M. Ney, IMT-Atlantique, France; A. Ijeh, M. Cueille, J.-Lou Dubard, Université Côte d'Azur, France;***17:00-17:20****O(N) MATRIX-VECTOR MULTIPLICATION IN PERIODIC MOM***D. Tihon, C. Craeye, Université catholique de Louvain, Belgium;*

17:20-17:40

DIFFUSION MRI CONSISTENT WIRE MODELS FOR EFFICIENT SOLUTIONS OF THE ANISOTROPIC FORWARD PROBLEM IN ELECTROENCEPHALOGRAPHY*M.Y. Monin, L. Rahmouni, F.P. Andriulli, Politecnico di Torino, Italy;*

17:40-18:00

H-MATRIX FAST DIRECT SOLUTION OF SURFACE-VOLUME-SURFACE EFIE FOR SCATTERING PROBLEMS ON GENERAL COMPOSITE METAL-DIELECTRIC OBJECTS*R. Gholami, V. Okhmatovski, University of Manitoba, Canada;*

18:00-18:20

A NEW PRECONDITIONER FOR THE EFIE BASED ON PRIMAL AND DUAL GRAPH LAPLACIAN SPECTRAL FILTERS*L. Rahmouni, F.P. Andriulli, Politecnico di Torino, Italy;*

MONDAY SEPTEMBER 9 - 11:40

ROOM SEMINARS 3-4-5 **SESSION 09 - ICEAA****ELECTROMAGNETIC THEORY AND EDUCATION**

Chair 1 H. Shirai - Chair 2 R. Sato

11:40-12:00

ON LINEAR AND SESQUILINEAR BOUNDARY CONDITIONS IN ELECTROMAGNETICS*I.V. Lindell, A. Sihvola, Aalto University, Finland;*

12:00-12:20

TIP DIFFRACTION COEFFICIENT FOR A WIDE-ANGLE CIRCULAR CONE*M. Katsav, E. Heyman, Tel Aviv University, Israel;*

12:20-12:40

NUMERICAL DISPERSION REDUCTION IN THE PARABOLIC WAVE EQUATION*A.J. Knisely, A.J. Terzuoli, IEEE, United States;*

14:00-14:20

COMPARISON OF ELECTROMAGNETIC ANTENNA CHU LIMIT AND Q OF GRAVITATIONAL RADIATORS*T.P. Weldon, K.L. Smith, UNC-Charlotte, NC, United States;*

14:20-14:40

ELECTROMAGNETIC EDUCATION MODULE: INTRODUCTORY TRANSMISSION LINE SIMULATION AND EXPERIMENT*K.L. Smith, T.P. Weldon, UNC-Charlotte, NC, United States;*

14:40-15:00

A NOVEL METHOD FOR MEASURING PERMITTIVITY USING TRANSMISSION LINE ANALYSIS AT MICROWAVE FREQUENCIES*A. Aquino-Velazquez, M. Clemente-Arenas, INICTEL-UNI, Peru;*

MONDAY SEPTEMBER 9 - 15:00

ROOM SEMINARS 3-4-5 **SESSION 10 - ICEAA****RECENT ADVANCEMENT OF ELECTROMAGNETIC THEORY**

Organized by H. Shirai

Chair 1 H. Shirai - Chair 2 R. Sato

15:00-15:20

APERTURE-COUPLING EFFECT OF TWO-LAYERED OPEN-LOOP MICROSTRIP BANDPASS FILTERS DESIGNED BY THE CUL-DE-SAC COUPLING MATRIX*K. Yamamura, H. Deguchi, M. Tsuji, Doshisha University, Japan;*

15:20-15:40

A UNIT CELL CONSTRUCTION BASED ON EQUIVALENT-CIRCUIT ELEMENTS FOR MICROSTRIP LEAKY-WAVE ANTENNAS*T. Kawaguchi, H. Deguchi, M. Tsuji, Doshisha University, Japan;*

15:40-16:00

A MULTI-BAND DIELECTRIC-LOADED HORN ANTENNA WITH TWO FEED SYSTEMS*Y. Akagi, H. Deguchi, M. Tsuji, Doshisha University, Japan;*

16:20-16:40

FUNDAMENTAL ANALYSIS OF ELECTROMAGNETIC WAVE SCATTERING FROM MULTI-LAYERED WINDOW GLASS IN MULTI-FREQUENCY BAND*R. Sato, Niigata University, Japan; H. Shirai, Chuo University, Japan;*

16:40-17:00

SIMULATION OF FOCUSING PHENOMENA OF RELATIVISTIC CHARGED PARTICLE BEAM IN MICROWAVE VORTEX FIELDS*H. Kawaguchi, Muroran Institute of Technology, Japan;*

17:00-17:20

POWER FLOW IN THE PLANE WAVE SCATTERING FROM A DIELECTRIC GRATING*A. Komiyama, Osaka Electro-Communication University, Japan;*

17:20-17:40

IMPROVED PRIMARY CBF GENERATION WITH THE USE OF GAUSS-SEIDEL METHOD*T. Tanaka, M. Takikawa, N. Yoneda, H. Miyashita, Mitsubishi Electric Corporation, Japan; K. Niino, N. Nishimura, Kyoto University, Japan;*

17:40-18:00

PHYSICAL MEANING OF HIDDEN RAYS IN WEDGE DIFFRACTION*S.Y. Kim, Korea Institute of Science and Technology, Korea, South;*

18:00-18:20

EQUIVALENCE BETWEEN KIM METHOD AND OMI METHOD IN SINGLE-CUT NEAR-TO-FAR-FIELD TRANSFORMATIONS FOR ANTENNA NEAR-FIELD MEASUREMENTS*M. Hirose, S. Kurokawa, Advanced Industrial Science and Technology, Japan;*

18:20-18:40

HIGH FREQUENCY ASYMPTOTIC EVALUATION OF PO INTEGRAL FOR EM SCATTERING FROM PEC CIRCULAR CYLINDER*T.Q. Ngoc, H. Shirai, Chuo University, Japan;*

MONDAY SEPTEMBER 9 - 11:40

ROOM SEMINARS 6-7 **SESSION 11 - ICEAA****ANTENNA SYSTEMS FOR RADIO ASTRONOMY**

Organized by D.B. Davidson, D. de Villiers, E. de Lera Acedo

Chair 1 D.B. Davidson - Chair 2 D. de Villiers, E. de Lera Acedo

11:40-12:00**A WIDE-BAND 4 – 12.25 GHZ FEED SYSTEM AND RECEIVER SYSTEM FOR THE AUSTRALIA TELESCOPE 22M-DIAMETER ANTENNA***C. Granet, Lyrebird Antenna Research, Australia; A. Dunning, M. Bowen, D.B. Hayman, J. Stevens, K.W. Smart, CSIRO, Australia;***12:00-12:20****ULTRA-WIDEBAND (UWB) RECEIVER FOR RADIO ASTRONOMY***K. Jeganathan, A. Dunning; Y. Chung, M. Bourne, CSIRO Australia Telescope, Australia; M. Bowen, SKA Telescope, United Kingdom; S. Castillo, N. Carter, P. Doherty, D. George, D. Hayman, S. Mackay, L. Reilly, P. Roberts, P. Roush, S. Severs, K. Smart, R. Shaw, S. Smith, J. Tuthill, CSIRO Australia Telescope, Australia;***12:20-12:40****WIDEBAND SINGLE PIXEL FEED SYSTEM OVER 4.6-24 GHZ FOR THE SQUARE KILOMETRE ARRAY***J. Flygare, Chalmers University, Sweden; B. Dong, Chinese Academy of Sciences, China; J. Yang, L. Hellndner, M. Dahlgren, Chalmers University, Sweden; J. Chengjin, Chinese Academy of Sciences, China; M. Pantaleev, G. Hovey, J. Conway, Chalmers University, Sweden;***14:00-14:20****MEASUREMENTS OF THE SKA BAND 2 RADIO ASTRONOMY RECEIVER***R. Lehmensiek, I.P. Theron, EMSS Antennas, South Africa;***14:20-14:40****PLANAR PHASED ARRAY FEED FOR THE LOVELL TELESCOPE***Y. Zhang, A. El-Makadema, L. Danoon, A.K. Brown, University of Manchester, United Kingdom;***14:40-15:00****BROADBAND K-Q-W FEED SYSTEM FOR THE 40 METERS YEBES RADIOTELESCOPE***F. Tercero, O. Garcia-Perez, Yebes Observatory, Spain;***15:00-15:20****IMAGING CHALLENGES WITH THE MEERKAT RADIO TELESCOPE***O. Smirnov, Rhodes University, South Africa; B. Hugo, South African Radio Astronomy Observatory, South Africa; K. Asad, Rhodes University, South Africa; L. Bester, South African Radio Astronomy Observatory, South Africa; C. Tasse, Observatoire de Paris Meudon, France;***15:20-15:40****USING EMBEDDED ELEMENT PATTERNS TO IMPROVE APERTURE ARRAY CALIBRATION***S.J. Wijnholds, M. Arts, ASTRON, Netherlands; P. Bolli, P. Di Ninni, INAF, Italy; G. Virone, CNR, Italy;***15:40-16:00****THE MID-FREQUENCY APERTURE ARRAY***K. Zarb-Adami, University of Oxford, United Kingdom;***16:20-16:40****ELECTROMAGNETIC MODELLING OF THE SKA-LOW AAVS1.5 PROTOTYPE***D.B. Davidson, ICRAR/Curtin, Australia; P. Bolli, OAA-INAF, Italy; M. Bercigli, IDS, Italy; P. Di Ninni, OAA-INAF, Italy; R. Steiner, S. Tingay, D. Ung, ICRAR/Curtin, Australia; A. van Es, SKAO, UK; G. Virone, IEIT-CNR, Italy; R. Wayth, ICRAR/Curtin, Australia***16:40-17:00****REACH: RADIO EXPERIMENT FOR THE ANALYSIS OF COSMIC HYDROGEN***E. de Lera Acedo, University of Cambridge, United Kingdom;***17:00-17:20****ANTENNA DESIGN AND OPTIMISATION OF THE RADIO EXPERIMENT FOR THE ANALYSIS OF COSMIC HYDROGEN***B. Klopper, D.I.L De Villiers, Stellenbosch University, South Africa; E. de Lera Acedo, University of Cambridge, United Kingdom;***17:20-17:40****FAST SIMULATION TECHNIQUE FOR ANTENNA INSTALLED ON A FINITE GROUND PLANE***J. Cavillot, D. Tihon, C. Craeye, Université Catholique de Louvain-La-Neuve, Belgium; E. de Lera Acedo, N. Razavi-Ghods, University of Cambridge, United Kingdom;*

MONDAY SEPTEMBER 9 - 17:40

ROOM SEMINARS 6-7 **SESSION 12 - ICEAA****RADIO ASTRONOMY (INCLUDING SKA)**

Chair 1 D.B. Davidson - Chair 2 D. de Villiers, E. de Lera Acedo

17:40-18:00**A NEW DIGITAL BACKEND FOR THE MEXICAN ARRAY RADIO TELESCOPE***A. Magro, University of Malta, Malta; R. Chiello, University of Oxford, United Kingdom; D. Cutajar, J. Borg, K. Zarb-Adami, University of Malta, Malta; A. Gonzalez-Esparza, J. Mejia-Ambriz, E. Aguilar-Rodriguez, A. Espinosa-Jimenez, J.L. Godoy-Hernandez, E. Andrade-Mascote, Universidad Nacional Autónoma de México, Mexico;***18:00-18:20****NEW DEFINITION FOR DUAL-POLARIZED ANTENNA SENSITIVITY***T.D. Carozzi, Onsala Space Observatory, Sweden;***18:20-18:40****CONTINUOUS ANTENNA CALIBRATION FOR THE TRANSIENT ARRAY RADIO TELESCOPE***C.A. Moltano, M. Scheel, University of Otago, New Zealand;*

MONDAY SEPTEMBER 9 - 11:40

ROOM SEMINARS 1-2 **SESSION 13 - ICEAA****RESONATOR BASED MICROWAVE SENSORS**

Organized by F. Martin

Chair 1 F. Martin - Chair 2 K. Grenier

11:40-12:00**ON THE SENSITIVITY OF MICROWAVE SENSORS BASED ON SLOT RESONATORS AND FREQUENCY VARIATION***J. Muñoz-Enano, P. Vélez, C. Herrojo, Universitat Autònoma de Barcelona, Spain; M. Gil, Universidad Politécnica de Madrid, Spain; F. Martín, Universitat Autònoma de Barcelona, Spain;***12:00-12:20****DETECTION MODALITIES OF DISPLACEMENT SENSORS BASED ON SPLIT RING RESONATORS: PROS AND CONS***A.K. Horestani, Aerospace Research Institute, Iran; Z. Shaterian, Technical and Vocational University, Iran; F. Martin, Universitat Autònoma de Barcelona, Spain;***12:20-12:40****MICROWAVE BASED RESONANT BIOSENSORS FOR MULTIPLE MOLECULAR CONCENTRATIONS QUANTIFICATION***D. Dubuc, T. Chretiennot, K. Grenier, LAAS-CNRS, France;*

14:00-14:20**MICROWAVE-MICROFLUIDIC INTEGRATED NONCONTACT SENSOR FOR NONINVASIVE IN-SITU CHEMICAL MONITORING APPLICATIONS***Z. Abbasi, M. Daneshmand, University of Alberta, Canada;***14:20-14:40****MICROWAVE MICROFLUIDIC SENSOR USING MICROSTRIP LINE TERMINATED WITH LC RESONATORS***A. Ebrahimi, J. Scott, K. Ghorbani, RMIT University, Australia;***14:40-15:00****ON THE APPLICATIONS OF S-SHAPED SPLIT RING RESONATORS (S-SRR) IN SENSORS, FILTERS, AND ANTENNAS***A.K. Horestani, N. Varmazyar, F. Sadeghikia, M.T. Noghani, Aerospace Research Institute, Iran; Z. Shaterian, Technical and Vocational University, Iran ; F. Martin, Universitat Autònoma de Barcelona, Spain;*

MONDAY SEPTEMBER 9 - 15:00

ROOM SEMINARS 1-2 **SESSION 14 - ICEAA****MODERN PROBLEMS OF MATHEMATICAL AND COMPUTATIONAL ELECTROMAGNETICS AND THEIR ADVANCED APPLICATIONS****Organized by M.N. Georgieva-Grosse, G.N. Georgiev**

Chair 1 M.N. Georgieva-Grosse - Chair 2 G.N. Georgiev

15:00-15:20**EQUIVALENCE BETWEEN CIRCUIT AND FIELD THEORIES FOR DESCRIBING PULSE PROPAGATION IN A COAXIAL CABLE***P.L.E. Uslenghi, University of Illinois at Chicago, IL, United States;***15:20-15:40****RADIATION OF ELECTROMAGNETIC WAVES FROM A NONSYMMETRIC ANTENNA LOCATED ON THE SURFACE OF AN OPEN GYROTROPIC CYLINDRICAL WAVEGUIDE***O.M. Ostafiychuk, V.A. Es'kin, A.V. Kudrin, University of Nizhny Novgorod, Russia;***15:40-16:00****AZIMUTHALLY MAGNETIZED CIRCULAR FERRITE-DIELECTRIC WAVEGUIDE: IMPACT OF THE MATERIAL AND GEOMETRY PARAMETERS ON THE CUT-OFF FREQUENCIES FOR THE NORMAL TE₀ MODES***G. Nikolov Georgiev, University of Veliko Tirmovo "St. St. Cyril and Methodius", Bulgaria; M. Nikolova Georgieva-Grosse, Consulting and Researcher in Physics and Computer Sciences, Polikraishte, Bulgaria;***16:20-16:40****SYNTHESIS OF AN ANISOTROPIC SURFACE, THAT REFLECTS TWO INCIDENT PLANE WAVES IN TWO GIVEN DIRECTIONS ON ORTOGONAL POLARIZATIONS***T.Yu. Privalova, Yu.V. Yukhanov, E.E. Privalov, T.O. Amirokov, Southern federal university, Russia;***16:40-17:00****DIVERGENCE-FREE SYMMETRIC TENSORS IN MAGNETO-HYDRODYNAMICS***G.F. Crosta, University of Milan Bicocca, Italy;***17:00-17:20****SECOND ORDER APPROACH ON INHOMOGENEOUS FREDHOLM EQUATIONS SIMULTANEOUSLY DESCRIBES RESONANT AND CONVENTIONAL WAVES FOR LOCAL AND NON-LOCAL INTERACTIONS***J.M. Velazquez-Arcos, J. Granados-Samaniego, C.A. Vargas, Universidad Autónoma Metropolitana, Mexico;***17:20-17:40****CIRCUIT MODELS FOR STACKED PLANAR PERIODIC STRUCTURES***F. Mesa, R. Rodríguez-Berral, F. Medina, University of Sevilla, Spain;***17:40-18:00****AZIMUTHALLY MAGNETIZED CIRCULAR FERRITE-DIELECTRIC WAVEGUIDE: CONDITION FOR PHASE SHIFTER OPERATION***M. Nikolova Georgieva-Grosse, Consulting and Researcher in Physics and Computer Sciences, Polikraishte , Bulgaria; G. Nikolov Georgiev, University of Veliko Tirmovo "St. St. Cyril and Methodius", Bulgaria;***18:00-18:20****LOVE WAVE MAGNETIC FIELD SENSOR MODELING-FROM 1D TO 3D MODEL***J. Schmalz, B. Spetzler, F. Faupel, M. Gerken, Kiel University, Germany;***18:20-18:40****DYNAMIC PATTERNS TECHNIQUE FOR CIRCULAR PHASED ARRAY DIAGNOSTICS***A.B. Khashimov, D.S. Klygach, Russia; M.G. Vakhitov, South Ural State University, Russia;*

TUESDAY SEPTEMBER 10 - 08:20

ROOM FALLA **SESSION 15 - IEEE APWC****IDE/MULTI BAND ANTENNAS AND EMERGING ANTENNA TECHNOLOGIES****Organized by H. Nakano**

Chair 1 H. Nakano - Chair 2 M. Krairiksh

08:20-08:40**TILTED BEAM FROM A SPIRAL ANTENNA***H. Nakano, T. Abe, Hosei University, Japan; T. Kawano, National Defense Academy, Japan; A. Mehta, Swansea University, United Kingdom; J. Yamauchi, Hosei University, Japan;***08:40-09:00****COMPACT AND WIDEBAND DIPOLE ANTENNAS***A. Abdelmottaleb Omar, Z. Shen, Nanyang Technological University, Singapore;***09:00-09:20****A BROADBAND MILLIMETER WAVE ARRAY ANTENNA***S. Kaushal, N. Guan, Fujikura Ltd., Japan;***09:20-09:40****SPIRAL ANTENNA WITH A CIRCULAR HIS REFLECTOR***M. Tanabe, Toshiba Corporation, Japan;***09:40-10:00****A MINIATURIZED MULTI-BAND CIRCULARLY POLARIZED ANTENNA USING A BACK-LOBE REDUCTION TECHNIQUE***H. Sakamoto, T. Yanagi, Y. Nishioka, N. Yoneda, H. Miyashita, Mitsubishi Electric, Japan;***10:00-10:20****TEM HORN INSPIRED WIDEBAND ANTENNAS FOR DIVERSE APPLICATIONS***M. Elmansouri, D. Filipovic, University of Colorado Boulder, CO, United States;***10:40-11:00****A WIDEBAND CROSSED-DIPOLE ANTENNA FOR LTE700/GSM850/GSM900 BASE STATIONS***Z. Yang, X. Mo, Y. Cui, R. Li, South China University of Technology, China;***11:00-11:20****A BROADBAND FULL-WAVE DIPOLE ANTENNA ARRAY***G.-H. Sun, H. Wong, J. Yang Yang, University of Hong Kong, China;***11:20-11:40****ELECTRONICALLY BEAM-STEERABLE DUAL-BAND REFLECTARRAY FOR SATELLITE COMMUNICATIONS***Q. Luo, S. Gao, University of Kent, United Kingdom; Y Wang, I. Bakaimi, A. Mostaed, C.H. Groot, B. Hayden, University of Southampton, United Kingdom; I. Reaney, University of Sheffield, United Kingdom;*

11:40-12:00**A TRIPLE-BAND CIRCULARLY-POLARIZED PRINTED INVERTED-F ANTENNA***T. Fujimoto, S. Ota, K. Shimizu, C.-E. Guan, Nagasaki University, Japan;***12:00-12:20****A COMPACT ANTENNA FOR AN UHF BAND IONOSPHERE OBSERVATION RECEIVER***M. Matsunaga, Tokyo University of Technology, Japan; M. Yamamoto, Kyoto University, Japan;***12:20-12:40****MINIATURIZED MACKEY TYPE S BY PROVIDING A SHORT CIRCUIT PLATE AT THE END***S. Makino, T. Tamura, K. Itoh, Kanazawa Institute of Technology, Japan;***14:00-14:20****A BROADBAND METASURFACE POLARIZATION CONVERTER WITH BOW-TIE UNIT CELLS***T. Fukusako, T. Noishiki, R. Kuse, Kumamoto University, Japan;***14:20-14:40****A NOVEL FILTER ANTENNA FOR BASE STATION***Y.-L. Chen, Q.-X. Chu, South China University of Technology, China;***14:40-15:00****TWO TYPES OF HIGH GAIN SLOT ARRAY ANTENNAS BASED ON RIDGE GAP WAVEGUIDE IN THE D-BAND***J. Liu, A. Uz Zaman, J. Yang, Chalmers University of Technology, Sweden;***15:00-15:20****A NOVEL ANTENNA COVERED BY PLANAR INVERTED-L STUB TO KEEP THE COMMUNICATION DISTANCE WHETHER OPTIONAL CIRCUIT BOARD EXIST OR NOT***Y. Koga, M. Kai, Fujitsu Connected Technologies Limited, Japan;***15:20-15:40****LEAKY-WAVE ANTENNAS WITH LOADED COMPLEMENTARY COMPONENTS FOR HIGH-PERFORMANCE AND WIDEBAND APPLICATION***Y.-L. Lyu, F.-Y. Meng, K. Zhang, G.-H. Yang, X. Ding, J. Fu, C. Wang, Q. Wu, Harbin Institute of Technology, China; K. Wu, Polytechnique Montreal, Canada;***15:40-16:00****AN UNBALANCED-FEED GRID ARRAY ANTENNA COMPOSED OF DIAMOND-SHAPED ELEMENTS PRINTED ON A DIELECTRIC SUBSTRATE***T. Kawano, National Defense Academy, Japan; H. Nakano, Hosei University, Japan;***16:20-16:40****METANTENNAS: MULTIFUNCTIONAL METASURFACE ANTENNAS***T. Li, Southeast University, China; Z. Ning Chen, National University of Singapore, Singapore;***16:40-17:00****A SUM-DIFFERENCE PATTERN RECONFIGURABLE ANTENNA FOR NARROW DOWN BEAMWIDTH OF THE SUBTRACTED PATTERN***H. Nam Dao, M. Krairiksh, King Mongkut's Institute of Technology Ladkrabang, Thailand;***17:00-17:20****ULTRA LOW PROFILE INVERTED L ANTENNA COMPOSED OF CPW PRINTED ON PET SHEET***M. Taguchi, Nagasaki University, Japan;***17:20-17:40****DESIGN OF AN UHF POD ANTENNA AND ITS EFFICIENCY OPTIMIZATION BY GENETIC ALGORITHMS***C.-F. Huang, C.-W. Ni, Tatung University, Taiwan;***17:40-18:00****MONOCONE ANTENNA WITH INVERTED-L AND-F STRUCTURE***K. Matsubayashi, N. Michishita, H. Morishita, National Defense Academy of JAPAN, Japan;***18:00-18:20****HIGH GAIN BEAM STEERABLE PHASED ARRAY INCORPORATING RECONFIGURABLE PARASITICS FORMED FROM LIQUID METAL***J. Kelly, Queen Mary University of London, United Kingdom; K. Alqurashi, Carol Crean, University of Surrey, United Kingdom; H. Filgueiras, Inatel, Brazil; A. Cerqueira, Inatel, Brazil; Z. Chen, H. Wong, City University of Hong Kong, China;***18:20-18:40****ANALYSIS AND MEASUREMENT OF DIODE MOUNTING META-SURFACE FOR REFLECTION BEAM CONTROL***T. Maruyama, K. Ozeki, National Institute of Technology, Japan; N. Suematsu H. Sato, M. Motoyoshi, Tohoku University, Japan; M. Omiya, Hokkaido University, Japan;*

TUESDAY SEPTEMBER 10 - 08:20

ROOM ANDALUCIA3 **SESSION 16 - ICEAA****NUMERICAL METHODS IN ELECTROMAGNETICS****Organized by R.D. Graglia, D.R. Wilton**

Chair 1 R.D. Graglia - Chair 2 D.R. Wilton

08:20-08:40**ANALYZING MULTILAYER RADOMES WITH ARBITRARY SHAPE USING A TECHNIQUE BASED ON CHARACTERISTIC BASIS FUNCTION METHOD***E. Garcia, A. Somolinos, Newfasant S.L, Spain; F. Catedra, Universidad de Alcala, Spain;***08:40-09:00****USE OF COMPUTATIONAL TECHNIQUES IN ELECTROMAGNETICS TO ENHANCE THE ACCURACY AND EFFICIENCY OF ANTENNA PATTERN MEASUREMENTS***T. Sarkar, H. Chen, Syracuse University, NY, United States; M. Salazar-Palma, Universidad Carlos III de Madrid, Spain;***09:00-09:20****CONVERGENCE AND PHYSICS-BASED CHECKS OF THIN-WIRE MOM FORMULATIONS FOR PHASED ARRAY ANALYSIS***D.B. Davidson, ICRAR/Curtin, Australia; K.F. Warnick, Brigham Young University, UT, United States;***09:20-09:40****ELECTROMAGNETIC ANALYSIS OF FINITE ARRAYS WITH APERIODICAL ELEMENT-WISE MATERIALS***L. Landesa, J.M. Taboada, A. Serna, University of Extremadura, Spain;***09:40-10:00****AN FDTD-IDM-CGF METHOD FOR INVESTIGATING CORRELATION, MUTUAL COUPLING AND ENERGY DYNAMICS IN ANTENNA SYSTEMS***D. Sarkar, Royal Military College, Canada; S. Mikki, University of New Haven, CT, United States; Y. Antar, Royal Military College, Canada;***10:00-10:20****EFFECT OF FINITE PRECISION ON EM SIMULATIONS FOR HIGH-CONTRAST BIOLOGICAL MEDIA AT LOW FREQUENCIES***M.J.R.A. van Rossum, R.M.C. Mestrom, M.C. van Beurden, Eindhoven University of Technology, Netherlands;***10:40-11:00****EFFICIENT NUMERICAL MODELING OF SCATTERING BY ELECTRICALLY LARGE OBJECTS IN A STRATIFIED MEDIUM FOR IMAGING APPLICATIONS***K.D. Zhang, L.L. Goddard, J.M. Jin, University of Illinois, IL, United States;***11:00-11:20****NONSINGULAR LAPLACIAN REPRESENTATION OF THE ASYMPTOTIC PART OF THE LAYERED MEDIUM GREEN FUNCTION IN THE MIXED POTENTIAL FORMULATION***E. Bleszynski, M. Bleszynski, T. Jaroszewicz, Monopole Research, CA, United States; W.A. Johnson, Consultant, NM, United States; J. Riveroz, ISMB, Italy; F. Vipiana, Politecnico di Torino, Italy; D. Wilton, University of Houston, TX, United States*

11:20-11:40**FAST AND ACCURATE ANALYSIS OF THREE-DIMENSIONAL STRUCTURES INVOLVING NEAR-ZERO-INDEX MATERIALS***B. Karaosmanoglu, Y. Koyaz, H. Ibili, O. Ergul, Middle East Technical University, Turkey;***11:40-12:00****EXTENDED-SDIM: AN EFFICIENT TECHNIQUE FOR RIGOROUS EVALUATION OF ELECTROMAGNETIC SCATTERING BY A 2D ROUGH SURFACE.***Y. Arencibia Noa, C. Bourlier, Université de Nantes, France; G. Kubické, DGA-MI, France; S. Bellez, CMN Cherbourg, France;***12:00-12:20****A HYBRID DIRECT AND ITERATIVE SOLVER IN THE FRAMEWORK OF DDM FOR MULTISCALE PROBLEMS***Mi. Jiang, Z. Rong, L. Lei, X. Que, J. Hu, University of Electronic Science and Technology of China, China;***12:20-12:40****GENERALIZED AUTOMATIC SURFACE RECONSTRUCTION FOR CEM SIMULATIONS***B.M. Notaros, J.J. Harmon, C.L. Key, Colorado State University, CO, United States;***14:00-14:20****FAST MAXWELL'S SIMULATION OF NEW REAL-WORLD PROBLEMS AT THE NANOSCALE***J.M. Taboada, University of Extremadura, Spain; D.M. Solís, University of Pennsylvania, PA, United States; V.F. Martín, D. Larios, L. Landesa, University of Extremadura, Spain; J.L. Rodríguez, F. Obelleiro, University of Vigo, Spain;***14:20-14:40****GEOMETRIC MOM FORMULATION FOR EIGENMODE ANALYSIS***D. Tihon, C. Craeye, Université catholique de Louvain, Belgium;***14:40-15:00****FULLY NUMERICAL EVALUATION OF STRONGLY SINGULAR 4-D INTEGRALS BY DOUBLE APPLICATION OF THE DIVERGENCE THEOREM***J. Rivero, F. Vipiana, Politecnico di Torino, Italy; D.R. Wilton, University of Houston, TX, United States; W.A. Johnson, Consultant, United States;***15:00-15:20****INVESTIGATIONS ON THE SOLUTION OF THE MAGNETIC FIELD INTEGRAL EQUATION WITH RAO-WILTON-GLISSON BASIS FUNCTIONS***J. Komprobst, Technical University of Munich, Germany; T.F. Eibert, Technical University of Munich, Germany;***15:20-15:40****A STABILIZED SOLUTION OF TIME-DOMAIN COMBINED FIELD INTEGRAL EQUATION USING ASSOCIATED LAGUERRE FUNCTIONS***M.-D. Zhu, Y. Zhang, X.-W. Zhao, Xidian University, China;***15:40-16:00****A LOW RANK STUDY OF TWO SPATIAL UNKNOWN GROUPS AS A FUNCTION OF SEPARATION DISTANCE***J. Shaeffer, Matrix Compression Technologies, LLC, GA, United States;***16:20-16:40****FROM LOW TO ULTRA HIGH ORDER BASIS FUNCTIONS: GENERAL APPROACH FOR HIGHLY ACCURATE AND EFFICIENT EM MODELING***B.M. Kolundzija, University of Belgrade, Serbia; M.M. Kostic, WIPL-D, Belgrade, Serbia; A.J. Krneta, D.I. Olcan, J.G Perovic, S.V. Savic, M.M Ilic, University of Belgrade, Serbia;***16:40-17:00****MEIXNER'S CURRENT EDGE BEHAVIORS AND THEIR APPEARANCES IN MOM SOLUTIONS: A NOVEL STEP-LIKE STRUCTURE CREATING EDGES AND INNER AND OUTER WEDGES***J. Wang, Y. Rahmat-Samii, University of California at Los Angeles, CA, United States;***17:00-17:20****AN ACCURATE INTEGRATION OF BASIS FUNCTIONS WITH CORNER SINGULARITIES FOR MOM APPLICATIONS***R.D. Graglia, Politecnico di Torino, Italy; A.F. Peterson, Georgia Institute of Technology, GA, United States; P. Petriani, Politecnico di Torino, Italy*

TUESDAY SEPTEMBER 10 -17:20

ROOM ANDALUCIA 3 **SESSION 17 - ICEAA****PHASED AND ADAPTIVE ARRAYS**

Chair 1 A. Bagheri - Chair 2 H. Kaouach

17:20-17:40**AN L-BAND LEAKY-WAVE SLOT ANTENNA FOR PHASED ARRAY SYSTEM APPLICATION***C. Yuan, X. Zhao, Q. Zhang, National University of Defense Technology, China;***17:40-18:00****MMWAVE ANTENNA ARRAY BASED ON GAP WAVEGUIDE TECHNOLOGY FOR 5G APPLICATIONS***A. Bagheri, C. Bencivenni, Gapwaves AB, Sweden; A.A. Glazunov, University of Twente, Netherlands;***18:00-18:20****A COMPRESSIVE MICROWAVE SINGLE-PIXEL IMAGER VIA BINARY-STATE SURFACES***H.F. Alqadah, J.P. Bobak, S.M. Rudolph, M.W. Nurnberger, D. Truesdale, US Naval Research Laboratory, United States;***18:20-18:40****LINEARLY POLARIZED UNIT-CELLS FOR TRANSMIT-ARRAYS OPERATING IN MMWAVE BANDS***H. Kaouach, O. Pigaglio, University of Toulouse-CNRS, France;*


TUESDAY SEPTEMBER 10 - 08:20

ROOM ANDALUCIA 2 **SESSION 18 - ICEAA****SIMULATION OF SPACE PLASMA-WAVE INTERACTIONS IN THE LABORATORY**

Organized by W.E. Amatucci, E. Scime

Chair 1 W.E. Amatucci - Chair 2 E. Scime

08:20-08:40**STRUCTURE OF SPONTANEOUS ION ACCELERATION REGIONS IN EXPANDING PLASMAS***E. Scime, West Virginia University, WV, United States; E. Aguirre, Auburn University, AL, United States; C. Beatty, R. Beatty, T. Good, J. McLaughlin, WVU, WV, United States; E.E. Scime, Purdue University, IN, United States; T. Steinberger, WVU, WV, United States;***08:40-09:00****ENERGETIC ELECTRONS UPSTREAM AND DOWNSTREAM OF A CURRENT-FREE DOUBLE LAYER (CFDL) IN AN INDUCTIVELY COUPLED HELICON PLASMA.***L. Buschmann, N. Gulbrandsen, A. Fredriksen, UiT The Arctic University of Norway, Norway;***09:00-09:20****HELICON AND ECR PLASMA SOURCES FOR SPACE PROPULSION: SIMULATION AND TESTING***E. Ahedo, Universidad Carlos III de Madrid, Spain;***09:20-09:40****EXPERIMENTAL STUDY OF MAGNETIC RECONNECTION DURING THE MERGING PROCESS OF TWO COLLIDING FIELD REVERSED CONFIGURATIONS***X. Sun, M. Lin, Z. Yang, P. Shi, University of Science and Technology of China, China;*

- 09:40-10:00**
IN-FLIGHT INSTABILITIES OF DOUBLE PROBE ELECTRIC FIELD INSTRUMENTS: A SURVEY OF OBSERVATIONS AND ANALYSES AND PROPOSED LABORATORY INVESTIGATIONS
J.W. Bonnell, University of California at Berkeley, CA, United States;
- 10:00-10:20**
A NEW REGIME OF WHISTLER WAVES IN THE LABORATORY
G. Joshi, Nirma University, India; G. Ravi, Institute for Plasma Research, India;
- 10:40-11:00**
OSCILLATORY BEHAVIOR OF HOLLOW GRID CATHODE DISCHARGES
R. Schrittwieser, C.T. Teodorescu-Soare, University of Innsbruck, Austria; F. Enescu, Alexandru Ioan Cuza University, Romania; C. Ionita, University of Innsbruck, Austria; D.-G. Dimitriu, S. Gurlui, Alexandru Ioan Cuza University, Romania; F. Mazzanti, Dublin Institute of Technology, Ireland; S.-A. Irimiciuc, National Institute for Laser, Plasma and Radiation Physics, Romania; B. Hodoroba, University of Bucharest, Romania; T. O'Hara, Dublin Institute of Technology, Ireland; O. Vasilovici, University of Innsbruck, Austria; L. Amarandi, Alexandru Ioan Cuza University, Romania;
- 11:00-11:20**
BROADENING OF MM-WAVE BEAM BY PLASMA TURBULENCE IN THE BASIC PLASMA PHYSICS DEVICE TORPEX AND TCV TOKAMAK
I. Furno, S. Alberti, M. Baquero, O. Chellai, T. Goodman, P. Ricci, F. Riva, EPFL, Switzerland; O. Maj, MPI-Garching, Germany;
- 11:20-11:40**
OVERVIEW OF PLASMA WAVE STUDIES USING THE BASIC PLASMA SCIENCE FACILITY
T.A. Carter, S. Dorfman, J. Robertson, S. Vincena, UCLA, CA, United States;
- TUESDAY SEPTEMBER 10 - 11:40 **ROOM ANDALUCIA 2** 
- SESSION 19 - ICEAA**
- NATURAL AND STIMULATED EMISSIONS IN THE IONOSPHERE AND MAGNETOSPHERE**
Organized by G. Ganguli
 Chair 1 G. Ganguli
-
- 11:40-12:00**
WAVE-PARTICLE INTERACTIONS IN THE EARTH'S MAGNETOSPHERE
D.N. Baker, University of Colorado Boulder, CO, United States;
- 12:00-12:20**
KINETIC PROPERTIES OF MESOSCALE PLASMA INJECTIONS
A. Ukhorskiy, K. Sorathia, V. Merkin, JHU/APL, United States; C. Crabtree, A. Fletcher, NRL, United States; D. Malaspina, LASP, United States;
- 12:20-12:40**
PLASMA WAVES IN THE INNER MAGNETOSPHERE: RESULTS FROM THE ELECTRIC AND MAGNETIC FIELD INSTRUMENT SUITE AND INTEGRATED SCIENCE (EMFISIS) ON THE VAN ALLEN PROBES
C.A. Kletzing, The University of Iowa, IA, United States;
- 14:00-14:20**
ELECTROMAGNETIC STRUCTURES AND PARTICLE ACCELERATION IN EARTH'S RADIATION BELTS
C.C. Chaston, Space Sciences Lab, CA, United States
- 14:20-14:40**
KINETIC PHYSICS OF DIPOLARIZATION FRONTS: THEORY, SIMULATION, LABORATORY EXPERIMENTS AND IN SITU OBSERVATIONS
C. Crabtree, G. Ganguli, A. Fletcher, E. Tejero, L. Enloe, US Naval Research Laboratory, United States; D. Malaspina, X. Chu, University of Colorado, United States;
- 14:40-15:00**
NONLINEAR CONVECTIVE GROWTH OF WHISTLER-MODE CHORUS AND ELECTROMAGNETIC ION CYCLOTRON RISING-TONE EMISSIONS
Y. Omura, Kyoto University, Japan
- 15:00-15:20**
HISS WAVES IN THE INNER MAGNETOSPHERE: DENSITY DEPENDENCE AND A DIVERSITY OF FORMS
D. Malaspina, University of Colorado, CO, United States; J.-F. Ripoll, CEA, DAM, DIF, France; X. Chu, University of Colorado, CO, United States; A. Drozdov, University of California at Los Angeles, CA, United States; H. Zhu, University of Texas at Dallas, TX, United States; G. Hospodarsky, University of Iowa, IA, United States; J. Wygant, University of Minnesota, MN, United States;
- 15:20-15:40**
WAVE-PARTICLE INTERACTIONS IN EARTH'S INNER MAGNETOSPHERE: EXPERIMENTAL RESULTS FROM BARREL
R.M. Millan, Dartmouth College, NH, United States; J.G. Sample, Montana State University, MT, United States; L.A. Woodger, Dartmouth College, NH, United States; M.P. McCarthy, University of Washington, WA, United States; D.M. Smith, U. C. Santa Cruz, CA, United States; T. Sotirelis, A.Y. Ukhorskiy, Johns Hopkins Applied Physics Laboratory, MD, United States;
- 15:40-16:00**
RECENT ADVANCES IN OUR UNDERSTANDING OF THE EARTH'S RADIATION BELTS
S.G. Kanekal, NASA GSFC, United States; D.N. Baker, LASP, University of Colorado, CO, United States; D.G. Sibeck, NASA GSFC, United States;
- 16:20-16:40**
SINGLE DOMAIN NANOPARTICLE TRANSMITTERS
K. Papadopoulos, University of Maryland, United States;
- 16:40-17:00**
THEORETICAL AND COMPUTATIONAL PREDICTIONS FOR THE UPCOMING SMART EXPERIMENT
A.C. Fletcher, G. Ganguli, C. Crabtree, A.S. Richardson, Naval Research Laboratory, United States; J. Huba, Syntek Technologies, United States; C. Siefiring, B. Amatucci, E. Tejero, Naval Research Laboratory, United States;
- 17:00-17:20**
STIMULATED FORE-WAKE EXCITATIONS FROM MOVING CHARGED OBJECTS IN THE IONOSPHERE
A. Sen, S.K. Yadav, Institute for Plasma Research, India; G. Ganguli, C. Crabtree, Naval Research Laboratory, United States;
- 17:20-17:40**
MASER RADIATION IN THE LABORATORY AND SPACE PLASMAS
R. Bingham, Rutherford Appleton Laboratory, United Kingdom;
- 17:40-18:00**
SWARM-E OBSERVATIONS OF NATURAL AND STIMULATED EMISSIONS IN THE TOPSIDE IONOSPHERE
A.W. Yau, H.G. James, University of Calgary, Canada; G.W. Perry, New Jersey Institute of Technology, United States; R.B. Langley, University of New Brunswick, Canada; P.A. Bernhardt, C. Siefiring, Naval Research Lab, United States;
- 18:00-18:20**
OBSERVATIONS OF ELECTROMAGNETIC WAVES AT VERY LOW FREQUENCY IN THE NEAR TOPSIDE IONOSPHERE
H.G. James, A.W. Yau, The University of Calgary, Canada

TUESDAY SEPTEMBER 10 - 18:20

ROOM ANDALUCIA 2 **SESSION 20 - ICEAA****ELECTROMAGNETIC APPLICATIONS TO NANOTECHNOLOGY**

Chair 1 G. Ganguli - Chair 2 L. Rahmouni

18:20-18:40**RADIO FREQUENCY DIELECTRIC CHARACTERIZATION AND PROCESSING OF POLYMERS CONTAINING NANOMATERIAL SUSCEPTORS***M.A. Saed, Texas Tech University, TX, United States; N. Patel, M.J. Green, Texas A&M University, TX, United States;***18:40-19:00****MODAL METHOD ANALYSIS OF QUANTUM-DOT NANOWIRES FOR SINGLE PHOTON SOURCES***U.M. Gür, N. Gregersen, S. Arslanagic, M. Mattes, Technical University of Denmark, Denmark;*

TUESDAY SEPTEMBER 10 - 08:20

ROOM ANDALUCIA 1 **SESSION 21 - ICEAA****NOVEL AND COMPLEX ELECTROMAGNETIC PHENOMENA AND APPLICATION**

Organized by F. Capolino

Chair 1 F. Capolino

08:20-08:40**VERTICAL STRIPS AS MANTLE CLOAK OF A DIELECTRIC CYLINDER UNDER OBLIQUE INCIDENCE***Z. Hamzavi-Zarghani, A. Yahaghi, Shiraz University, Iran; L. Matekovits, Politecnico di Torino, Italy;***08:40-09:00****PARAMETRIC RESONANCES IN TIME-MODULATED MEDIA***P. Halevi, J.S. Martínez-Romero, INAOE, Mexico;***09:00-09:20****COMPOUND METAOPTICS FOR LOSSLESS AMPLITUDE AND PHASE CONTROL OF WAVEFRONTS***B.O. Raeker, A. Grbic, University of Michigan, MI, United States;***09:20-09:40****BASINS OF ATTRACTION IN ASYMMETRIC PHOTONIC COUPLERS***C. Valagiannopoulos, Y. Zhiyenbayev, Nazarbayev University, Kazakhstan; Y. Kominis, National Technical University of Athens, Greece; V. Kovanis, Virginia Tech Research Center, VA, United States;***09:40-10:00****ANALYSIS AND APPLICATIONS OF GLIDE-SYMMETRIC HOLEY METASURFACES***F. Ghasemifard, KTH Royal Institute of Technology, Sweden; A. Alex-Amor, Universidad Politécnica de Madrid, Spain; G. Valerio, Sorbonne Université, France; O. Quevedo-Teruel, KTH Royal Institute of Technology, Sweden;***10:00-10:20****HARNESSING THE FROZEN-MODE IN COUPLED SILICON RIDGE WAVEGUIDES FOR TRUE TIME DELAY APPLICATIONS***B. Paul, N.K. Nahar, K. Sertel, The Ohio State University, OH, United States;***10:40-11:00****HIGH-Q SUBSTRATE-INTEGRATED-WAVEGUIDE RESONATOR WITH DEGENERATE BAND EDGE***T. Zheng, M. Casaletti, Z. Ren, Sorbonne Université, France; A. Abdelshafy, F. Capolino, University of California at Irvine, CA, United States; G. Valerio, Sorbonne Université, France;***11:00-11:20****HIGH-Q STATES IN SUBWAVELENGTH DIELECTRIC RESONATORS FORMING IN STRONG MODE COUPLING REGIME***A. Bogdanov, K. Koshelev, P. Kapitanova, M. Rybin, S. Gladyshev, Z. Sadrieva, K. Samusev, ITMO University, Russia; Y. Kivshar, Australian National University, Australia; M. Limonov, ITMO University, Russia;***11:20-11:40****DERIVATION OF CIRCUIT MODELS WITH CANONICAL TOPOLOGY FOR FREQUENCY SELECTIVE SURFACES WITH MULTIPLE RESONANCES***R. Rodríguez-Berral, F. Mesa, F. Medina, Universidad de Sevilla, Spain;***11:40-12:00****WIRELESS POWER TRANSFER BASED ON DIELECTRIC RESONATORS AND METASURFACES***M. Song, A. Markvart, ITMO University, Russia; C. Simovski, Aalto University, Finland; P. Kapitanova, P. Belov, ITMO University, Russia;***12:00-12:20****EXCEPTIONAL POINTS OF DEGENERACY INDUCED IN UNIFORM AND PERIODIC COUPLED SYSTEMS***A. F. Abdelshafy, T. Mealy, D. Oshmarin, M.Y. Nada, H. Kazemi, F. Capolino, University of California Irvine, CA, United States;***12:20-12:40****FULL-WAVE MODE HYBRIDIZATION IN NANOPARTICLE DIMERS***M. Pascale, G. Miano, R. Tricarico, C. Forestiere, Università degli Studi di Napoli 'Federico II', Italy;***14:00-14:20****ON THE (LOCAL) PHASE CENTER OF AN ANTENNA AND ITS EXPLICIT DERIVATION***M. Albani, S.C. Pavone, University of Siena, Italy;***14:20-14:40****OPTIMIZATION OF A RLSA BESSEL BEAM LAUNCHER FOR A MICROWAVES NEAR-FIELD LINK***M. Albani, S.C. Pavone, University of Siena, Italy;***14:40-15:00****THE ROLE OF LOW AND HIGH FREQUENCY ASYMPTOTES WHEN DERIVING PHYSICAL BOUNDS FOR ELECTROMAGNETICALLY FUNCTIONAL SURFACES***D. Sjöberg, Lund University, Sweden;*

TUESDAY SEPTEMBER 10 - 15:00

ROOM ANDALUCIA 1 **SESSION 22 - ICEAA****ELECTROMAGNETIC PROPERTIES OF NANOSTRUCTURES AND NANOANTENNAS**

Organized by A. Boag, G. Slepyan

Chair 1 A. Boag - Chair 2 G. Slepyan

15:00-15:20**GRAPHENE NANO PLATELETS TUNEABLE CONDUCTING PROPERTIES FOR INNOVATIVE MICROWAVE COMPONENTS***S. Bellucci, INFN-Frascati, Italy; M. Yasir, M. Bozzi, University of Pavia, Italy;***15:20-15:40****ELECTROSTATIC AND THERMAL CONTROL OF DYAKONOV-TAMM WAVES GUIDED BY A GRAPHENE-COATED STRUCTURALLY CHIRAL MEDIUM***F. Chiadini, University of Salerno, Italy; V. Fiumara, University of Basilicata, Italy; A. Scaglione, University of Salerno, Italy; A. Lakhtakia, Pennsylvania State University, PA, United States*

- 15:40-16:00**
QUANTUM NOISE RADAR: SUPERRESOLUTION WITH QUANTUM ANTENNAS BY ACCESSING SPATIOTEMPORAL CORRELATIONS
D. Mogilevtsev, IPNASB, Belarus; I. Peshko, BSU, Belarus; I. Karuseichyk, A. Mikhalychev, A.P. Nizovtsev, IPNASB, Belarus; G. Ya. Slepyan, A. Boag, Tel Aviv University, Israel;
- 16:20-16:40**
EXCITATION OF PT-SYMMETRIC GUIDING STRUCTURES
Y. Hadad, Tel-Aviv University, Israel;
- 16:40-17:00**
THEORY OF QUANTUM ANTENNAS AS OPEN SYSTEMS: ANTENNA EMISSION AS A COUPLING WITH PHOTONIC RESERVOIR
A. Komarov, G. Ya. Slepyan, Tel Aviv University, Israel;
- 17:00-17:20**
TIME-DEPENDENT RESPONSE OF CARBON NANO-STRUCTURES
D. Gabay, Tel Aviv University, Israel; A.E. Yilmaz, University of Texas at Austin, TX, United States; A. Boag, A. Natan, Tel Aviv University, Israel;
- 17:20-17:40**
FIELD QUANTIZATION IN ARBITRARILY-SHAPED METAL NANOPARTICLES
R. Tricarico, C. Forestiere, G. Miano, M. Pascale, Università degli Studi di Napoli 'Federico II', Italy;

TUESDAY SEPTEMBER 10 - 17:40

ROOM ANDALUCIA 1 **SESSION 23 - IEEE APWC****RFID TECHNOLOGIES**

Chair 1 E. Cetin - Chair 2 B. Pousot

- 17:40-18:00**
DUAL-BAND UHF RFID TAG FOR METALLIC ITEMS
H. Bouazza, Université Internationale de Rabat, Morocco; A. Lazaro, Universitat Rovira I Virgili, Spain; M. Bouya, Université Internationale de Rabat, Morocco; A. Hadjoudja, Université Ibn Tofail, Morocco;
- 18:00-18:20**
NOVEL INKJET-PRINTED CHIPLESS TAGS FOR RADIO-FREQUENCY-IDENTIFICATION APPLICATIONS
E. Cetin, M.B. Sahin, O. Ergul, Middle East Technical University, Turkey;
- 18:20-18:40**
STATISTICAL STUDY OF THE MATCHING PROPERTIES OF HIGH DENSITY RANDOMLY DISTRIBUTED DIPOLES
I. Adjali, B. Pousot, S. Mostarshedi, J.-M. Laheurte, Université Paris-Est, France;

TUESDAY SEPTEMBER 10 - 08:20

ROOM SEMINARS 3-4-5 **SESSION 24 - ICEAA****EMC AND SPECTRUM MANAGEMENT IN INTELLIGENT TRANSPORTATION SYSTEMS**

Organized by Y. Wen

Chair 1 Y. Wen - Chair 2 Y. Xiao

- 08:20-08:40**
SIMULATED-BASED GNSS FOR MAGLEV TRAIN LOCALIZATION PERFORMANCE ANALYSIS
D. Lu, B. Cai, J. Wang, J. Liu, Beijing Jiaotong University, China;
- 08:40-09:00**
FAST PREDICTION MODEL FOR THE SUSCEPTIBILITY OF BALISE TRANSMISSION MODULE SYSTEM BASED ON NEURAL NETWORK
Y. Song, Y. Wen, J. Zhang, D. Zhang, Beijing jiaotong university, China;
- 09:00-09:20**
AN ADVANCED RELIABILITY EVALUATION METHOD FOR GNSS-BASED TRAIN LOCALIZATION UNIT
B. Wu, B. Cai, D. Lu, Beijing Jiaotong University, China;
- 09:20-09:40**
THE INFLUENCE OF PANTOGRAPH ARCING RADIATION DISTURBANCE ON LTE-R
J. Wang, G. Wang, D. Zhang, J. Zhang, Y. Wen, Beijing Jiaotong University, China;
- 09:40-10:00**
FAST RISE-TIME INTENSIVE EMP PROTECTION FOR COMMUNICATION RF FRONT END
Y. Wang, Y. Li, Z. Meng, Army engineering university, China;
- 10:00-10:20**
CROWDPARKING: CROWDSOURCING BASED PARKING NAVIGATION IN AUTONOMOUS DRIVING ERA
C. Zhu, A. Mehrabi, Y. Xiao, Aalto University, Finland; Y. Wen, Beijing Jiaotong University, China

TUESDAY SEPTEMBER 10 - 10:40

SEMINARS 3-4-5 **SESSION 25 - ICEAA****RADAR IMAGING**

Chair 1 K. Kikkawa - Chair 2 S. Stephany

- 10:40-11:00**
DISTINGUISHING ELECTRONIC DEVICES USING HARMONIC RADAR BASED ON A LINEAR MODEL
M. Shahi, TOBB University of Economics and Technology, Turkey; H. Ilbegi, Ankara University, Turkey; I. Samil Yetik, TOBB University of Economics and Technology, Turkey; H. Taha Hayvacı, American University of the Middle East, Kuwait;
- 11:00-11:20**
DETECTION AND MICROWAVE IMAGING OF CONDUCTING OBJECTS BURIED VERY CLOSELY TO THE AIR-SOIL BOUNDARY
S. Dinç, H. Elibol, R. Güneri, A.B. Özdöl, F. Sik, I.T. Yesilyurt, M. Dogan, G. Turhan-Sayan, Middle East Technical University, Turkey;
- 11:20-11:40**
ARTIFACT REMOVAL FOR IMPULSE-RADIO RADAR-BASED BREAST CANCER DETECTION
H. Song, H. Watanabe, Hiroshima University, Japan; X. Xiao, Tianjin University, China; T. Kikkawa, Hiroshima University, Japan;
- 11:40-12:00**
CHARACTERIZATION OF MM-WAVE CONFORMAL ANTENNA ARRAYS FOR 3X8 MIMO RADAR
C. Vasanelli, B. Meinecke, Ulm University, Germany; J. Mayer, Karlsruhe Institute of Technology, Germany; O. Elsayad, P. Hüglér, F. Roos, Ulm University, Germany; T. Zwick, Karlsruhe Institute of Technology, Germany; C. Waldschmidt, Ulm University, Germany;
- 12:00-12:20**
A QUANTITATIVE EVALUATION FOR RADAR GRID MAP CONSTRUCTION
Z. Wen, D. Li, W. Yu, Shanghai Jiao Tong University, China;
- 12:20-12:40**
IMPACT OF AN AUTOMOTIVE CHIRP-SEQUENCE INTERFERER ON A WIDEBAND PSEUDO-NOISE RADAR
S. Stephany, B. Schweizer, C. Knill, C. Waldschmidt, Ulm University, Germany;
- 14:00-14:20**
A FULLY-POLARIZED UNITARY MUSIC FOR POLARIMETRIC SAR TOMOGRAPHY
L. Kong, X. He, X. Xu, Beihang University, China;

14:20-14:40**PARAMETRIC REPRESENTATION OF RADAR SIGNATURES USING THREE-DIMENSIONAL AUGMENTED STATE SPACE APPROACH***K. Wu, X. He, X. Xu, Beihang University, China;***14:40-15:00****SENSOR DEVELOPMENT FOR VITAL SIGN MONITORING OF ELDERLY PEOPLE***S. Schaefer, S. Mueller, D. Schmiech, A.R. Diewald, Hochschule Trier, Germany;***15:00-15:20****MILLIMETER WAVE SAR IMAGING FOR THE NON-DESTRUCTIVE TESTING OF 3D-PRINTED SAMPLES***M. Elsaadouny, J. Barowski, J. Jebramcik, I. Rolfes, Ruhr University Bochum, Germany;***15:20-15:40****EXPERIMENTAL EVALUATION OF SAR IMAGING USING FMCW RADAR AT C-BAND FOR SMALL UAVS***H.J. Martinez, S. Alvarez, M. Yarlequé, R. Cerna, Pontificia Universidad Católica del Perú, Peru;***15:40-16:00****TARGET SCATTERING MECHANISM ANALYSIS FROM POLARIZATION WIDEBAND RADAR SIGNATURES***R. Zhao, X. Xu, Beihang University, China;*

TUESDAY SEPTEMBER 10 - 16:20

ROOM SEMINARS 3-4-5 **SESSION 26 - ICEAA****INTEGRAL EQUATION AND FINITE METHODS**

Chair 1 O. Franek - Chair 2 S. Poulsen

16:20-16:40**AN ENTIRE-DOMAIN ANALYSIS OF 2-D STRUCTURES WITH CLOSED CROSS-SECTIONS USING HIGH-PRECISION INTEGRATION***J. Perovic, D. Olcan, University of Belgrade, Serbia;***16:40-17:00****SHOOTING AND BOUNCING RAYS IN RADOMES***S. Poulsen, Saab Dynamics AB, Sweden;***17:00-17:20****PLANE WAVE SPECTRUM IN RADOME APPLICATIONS***M. Andersson, Saab Dynamics AB, Sweden;***17:20-17:40****MODELING OF NEAR FIELD ILLUMINATION OF A BODY OF REVOLUTION FOR RCS V/UHF MEASUREMENTS***A. Pujols, F. Collino, P. Bonnemason, J. de Kat, CEA-CESTA, France;***17:40-18:00****INTEGRAL EQUATION ANALYSIS OF MULTI-PORT H-PLANE DEVICES CONTAINING ARBITRARILY SHAPED METALLIC AND/OR DIELECTRIC POSTS BY USING TWO-DIMENSIONAL CAVITY AND PARALLEL PLATE GREEN'S FUNCTIONS***F.D. Quesada Pereira, C. Gómez Molina, A. Álvarez Melcón, Universidad Politécnica de Cartagena, Spain; V.E. Boria Esbert, M. Guglielmi, Universidad Politécnica de Valencia, Spain;***18:00-18:20****APPLICATION OF THE ORTHOGONAL CURVILINEAR GRID TO FDTD MODELING OF A DEFLECTED WIND TURBINE BLADE***O. Franek, Aalborg University, Denmark;***18:20-18:40****SCATTERING BY A MAGNETIZED COLD PLASMA BODY***G.P. Zouros, G.D. Kolezas, National Technical University of Athens, Greece; N. Stefanou, J.A. Roumeliotis, National Technical University of Athens, Greece;*

TUESDAY SEPTEMBER 10 -08:20

ROOM SEMINARS 6-7 **SESSION 27 - ICEAA****STOCHASTIC ELECTROMAGNETIC FIELDS**Organized by **J.A. Russer**

Chair 1 J.A. Russer

08:20-08:40**MODELING OF NEAR-FIELD TO FAR-FIELD PROPAGATOR BASED ON THE JEFIMENKO'S EQUATIONS***A. Baev, Y.V. Kuznetsov, A. Gorbunova, M. Konovalyuk, Moscow Aviation Institute, Russia; J.A. Russer, eV-Technologies, France;***08:40-09:00****MEASUREMENT PROCEDURE FOR CYCLOSTATIONARY CHARACTERIZATION OF PCB RADIATED EMISSIONS***A. Baev, Y.V. Kuznetsov, A. Gorbunova, M. Konovalyuk, Moscow Aviation Institute, Russia; J.A. Russer, eV-Technologies, France;***09:00-09:20****STOCHASTIC SIGNAL PROPAGATION IN FIVE-SECTION WIDEBAND BRANCH-LINE HYBRID***B.P. Stosic, University of Niš, Serbia; M. Nedelchev, Technical University of Sofia, Bulgaria; J.A. Russer, Technical University of Munich, Germany; N.S. Doncov, Z. Stankovic, University of Niš, Serbia;***09:20-09:40****ESTIMATION OF THE NUMBER OF STOCHASTIC EM SOURCES WITH PARTIALLY CORRELATED RADIATION IN FAR-FIELD USING NEURAL MODEL***Z. Stankovic, N. Doncov, University of Nis, Serbia; J. Russer, Technical University of Munich, Germany; B. Stosic, University of Nis, Serbia;***09:40-10:00****SHIELDING EFFECTIVENESS OF CEMENTITIOUS COMPOSITES UNDER STOCHASTIC EXCITATION***L. Bastianelli, F. Moglie, università Politecnica delle Marche, Italy; G. Gradoni, University of Nottingham, United Kingdom; A. Gifuni, università degli studi di Napoli Parthenope, Italy; V. Mariani Primiani, Universita` Politecnica delle Marche, Italy;***10:00-10:20****A GENERALIZED MATHEMATICAL FRAMEWORK FOR MODELING STOCHASTIC ELECTROMAGNETIC FIELDS***M. Haider, Technical University of Munich, Germany; J.A. Russer, eV-Technologies, Germany;*

TUESDAY SEPTEMBER 10 -10:40

ROOM SEMINARS 6-7 **SESSION 28 - ICEAA****CHAOS AND COMPLEXITY IN ELECTROMAGNETISM**Organized by **G. Gradoni**

Chair 1 G. Gradoni- Chair 2 F. Moglie

10:40-11:00**EVALUATION OF STOCHASTIC ELECTROMAGNETIC FIELD IN MULTI-VOLUME REVERBERATION CHAMBER CONFIGURATIONS***L. Bastianelli, V. Mariani Primiani, Universita` Politecnica delle Marche, Italy; G. Gradoni, University of Nottingham, United Kingdom; F. Moglie, Universita` Politecnica delle Marche, Italy;*

11:00-11:20**FULL WAVE COMPUTATION OF THE ELECTROMAGNETIC FIELD IN CHAOTIC REVERBERATION CHAMBERS***L. Bastianelli, F. Moglie, G. Gradoni, University of Nottingham, United Kingdom; V. Mariani Primiani, università Politecnica delle Marche, Italy;***11:20-11:40****INFLUENCE OF MULTI-PATH FADING ON MIMO/OAM COMMUNICATIONS***G. Gradoni, University of Nottingham, United Kingdom; T.M. Antonsen, E. Ott, University of Maryland, MD, United States;***11:40-12:00****ENERGY TRANSFER IN COMPLEX NETWORKS: A QUANTUM GRAPH APPROACH***M. Ahmed, G. Gradoni, S. Creagh, C. Smartt, S. Greedy, G. Tanner, University of Nottingham, United Kingdom;***12:00-12:20****STOCHASTIC FDTD VERSUS CORRELATED/NON-CORRELATED MONTE CARLO***M.R. Cabello, L.D. Angulo, A.R. Bretones, M.F. Pantoja, A.M. Valverde, R.G. Martin, S.G. Garcia, University of Granada, Spain;***12:20-12:40****STATISTICS OF OFF-DIAGONAL ENTRIES OF WIGNER K-MATRIX FOR CHAOTIC WAVE SYSTEMS WITH ABSORPTION***S. Belga Fedeli, Y.V. Fyodorov, King's College London, United Kingdom*

TUESDAY SEPTEMBER 10 - 14:00

ROOM SEMINARS 6-7 **SESSION 29 - ICEAA****ADVANCED BEAMFORMING ANTENNAS****Organized by J. Guo**

Chair 1 J. Guo - Chair 2 C. Fumeaux

14:00-14:20**LINEAR SERIES-FED PATCH ARRAY WITH DUAL CIRCULAR POLARIZATION OR ARBITRARY LINEAR POLARIZATION***S. Jammy Chen, W. Withayachumnankul, The University of Adelaide, Australia; Y. Monnai, Keio University, Japan; C. Fumeaux, The University of Adelaide, Australia;***14:20-14:40****WIDE-ANGLE BEAM-SCANNING CIRCULAR-POLARIZATION SLOT-LOADED LEAKY-WAVE ANTENNA***S.-L. Chen, D. Karmakar, R. Ziolkowski, J. Guo, University of Technology Sydney, Australia;***14:40-15:00****WIDE-ANGLE WIDEBAND FREQUENCY-INDEPENDENT BEAM-SCANNING LEAKY WAVE ANTENNA***S.-L. Chen, D. Karmakar, R. Ziolkowski, J. Guo, University of Technology Sydney, Australia;***15:00-15:20****A 20GHZ SWITCHED BEAM LENS ANTENNA FOR AIRBORNE COMMUNICATIONS APPLICATIONS***S.L. Smith, K.W. Smart, N. Carter, A. Weily, N. Nikolic, I. Kekic, CSIRO, Australia;*

TUESDAY SEPTEMBER 10 - 15:20

ROOM SEMINARS 6-7 **SESSION 30 - ICEAA****OPTIMIZATION TECHNIQUES IN ELECTROMAGNETICS****Organized by M. Gustafsson, L. Jonsson, D. Sjöberg**

Chair 1 M. Gustafsson - Chair 2 L. Jonsson, D. Sjöberg

15:20-15:40**COMPUTATIONAL IMAGING AT MICROWAVES USING COMPRESSIVE SENSING***B. Fuchs, A. C. Tondo Yoya, M. Diama Lo, M. Davy, IETR-University of Rennes 1-CNRS, France;***15:40-16:00****OPTIMAL ANTENNA AND SCATTERING PROPERTIES***M. Gustafsson, Lund University, Sweden;***16:20-16:40****ON DIRECT MATCHING AND EFFICIENCY IMPROVEMENTS FOR INTEGRATED ARRAY ANTENNAS***B.L.G. Jonsson, A. Emadeddin, KTH Royal Institute of Technology, Sweden;***16:40-17:00****SURROGATE MODELING OF HIGH-FREQUENCY STRUCTURES USING NESTED KRIGING AND IMPROVED SAMPLING STRATEGY***S. Koziel, Reykjavik University, Iceland; A. Pietrenko-Dabrowska, Gdansk University of Technology, Poland;***17:00-17:20****EXPEDITED EM-DRIVEN OPTIMIZATION OF ANTENNA STRUCTURES USING GRADIENT SEARCH WITH JACOBIAN CHANGE AND DESIGN RELOCATION MONITORING***A. Pietrenko-Dabrowska, Gdansk University of Technology, Poland; S. Koziel, Reykjavik University, Iceland;***17:20-17:40****ON MINIMIZATION ALGORITHMS FOR PARETO-FRONT OPTIMIZATION OF ANTENNA PARAMETERS***B.L.G. Jonsson, KTH Royal Institute of Technology, Sweden;***17:40-18:00****OPTIMIZATION OF REFLECTARRAY BEAM SCANNING CAPABILITIES USING MQC10-BBO AND SNO ALGORITHMS***A. Niccolai, Politecnico di Milano, Italy; M. Beccaria, A. Massaccesi, Politecnico di Torino, Italy; R.E. Zich, Politecnico di Milano, Italy; P. Pirinoli, Politecnico di Torino, Italy;***18:00-18:20****ASSESSMENT AND ACCURATE EVALUATION OF ANTENNA SUPERDIRECTIVITY LIMITS WITH SPHERICAL WAVE EXPANSION***A. Debarb, A. Clemente, C. Delaveaud, CEA-Leti, France;***18:20-18:40****GESTURE RECOGNITION USING FMCW RADAR AND MACHINE LEARNING ON A RASPBERRY PI PLATFORM***D. Sjöberg, Lund University, Sweden;*

WEDNESDAY SEPTEMBER 11 -08:20

ROOM FALLA **SESSION 31 - IEEE APWC****LOW-PROFILE AND UWB ANTENNAS**

Chair 1 T.S. Bird - Chair 2 D. Filipovic

08:20-08:40**SLANT POLARISED CROSSED BOW-TIE ANTENNA ARRAY WITH REDUCED NUMBER OF PHASE SHIFTERS AND AN EMBEDDED FEED NETWORK***M. Ardeshir Tanha, M. Khalily, P. Xiao, University of Surrey, United Kingdom;***08:40-09:00****ON THE MATCHING OF STRIPLINE-FED CAVITY-BACKED SLOTS AS A SERIES-FED ARRAY ELEMENT***A. Hernández-Escobar, E. Abdo-Sánchez, C. Camacho-Peñalosa, Universidad de Málaga, Spain;***09:00-09:20****WIDE BANDWIDTH DUAL PORT, DUAL SENSE CIRCULAR POLARIZATION ANTENNA FOR SATELLITE APPLICATIONS***G.S. Mauro, G. Torrisi, INFN-LNS, Italy; P. Di Mariano, C. Squadrito, S. Emanuele, Sicilsat Communications s.r.l., Italy; L. Di Donato, G. Sorbello, Università di Catania, Italy;*

09:20-09:40**A MULTIOBJECTIVE GENETIC ALGORITHM FOR ANALYSIS, DESIGN AND OPTIMIZATION OF ANTIPODAL VIVALDI ANTENNAS**

M. Pumallica, J. Arizaca, Universidad Nacional San Antonio Abad del Cusco, Peru; M. Clemente, INICTEL-UNI, Peru;

09:40-10:00**THE EFFECTS OF THE TRAPEZOIDAL DIPOLE ARRAY ELEMENTS ON PLANAR LOG PERIODIC ANTENNA**

F. Zengin, TUBITAK, Turkey;

10:00-10:20**LOW-PROFILE HALF WAVELENGTH ULTRA WIDE BAND ANTENNA**

Y. Seon Choi, Dong-Su Choi, Ji-H. Hong, H.-J. Lee, W.-Woo Kim, J.-Myung Woo, Chungnam National University, Korea, South;

10:40-11:00**WIDEBAND SPECTRUM SENSING AND DIRECTION FINDING ANTENNA SUBSYSTEM**

M. Elmansouri, E. Etellisi, L. Boskovic, D. Filipovic, University of Colorado Boulder, CO, United States;

11:00-11:20**COMPACT DUAL BAND F-SHAPED ACS-FED MONOPOLE ANTENNA FOR WIMAX AND WLAN APPLICATIONS**

M. Idrees Magray, K. Muzaffar, IUST, India; G.S. Karthikeya IIT Delhi, India; S. K. Koul, IIT Delhi, India;

11:20-11:40**A STUDY ON THE MUTUAL COUPLING EFFECTS OF THE ULTRA-WIDEBAND VIVALDI ARRAY**

X. Zhang, J. Miao, Y. Wang, J. Wang, East China Research Institute of Electronic Engineering, China; M. Jin, Y. Dai, Anhui Province Engineering Laboratory for Antennas and Microwave, China;

11:40-12:00**NOVEL DUAL BAND AND ULTRA-WIDE BAND ANTENNAS**

V. Veremey, Qualcomm Inc., United States;

12:00-12:20**A COMPACT WEARABLE TEXTILE ANTENNA WITH DUAL BAND-NOTCHED CHARACTERISTICS FOR UWB APPLICATIONS**

S. Chilukuri, S. Gogikar, Vardhaman College of Engineering, India;

12:20-12:40**FREQUENCY RECONFIGURABLE AND RADIATION PATTERN STEERING OF MONOPOLE ANTENNA BASED ON GRAPHENE PADS**

D.N. Elsheakh, Electronics Research Institute, Egypt;

WEDNESDAY SEPTEMBER 11 - 14:00

ROOM FALLA **SESSION 32 - ICEAA****MATHEMATICAL METHODS IN ELECTROMAGNETICS**

Organized by P.D. Smith, J. Arnold, E. Vinogradova

Chair 1 P.D. Smith - Chair 2 E. Vinogradova

14:00-14:20**EXACT GEOMETRICAL OPTICS SCATTERING BY A TRUNCATED RECTANGULAR METAL TRENCH**

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

14:20-14:40**ANALYTICAL FULL-WAVE FREE INDUCTION DECAY SIGNAL MODEL FOR MRI**

P.S. Fuchs, R.F. Remis, Delft University of Technology, Netherlands;

14:40-15:00**ANGLE-RESOLVED SINGLE-WAVELENGTH 1D INVERSE PROFILING WITH A CSI APPROACH**

L.F. van Rijswijk, Eindhoven University of Technology, Netherlands; T. Zacharopoulou, R. Dirks, ASML Netherlands B.V., Netherlands; M.C. van Beurden, Eindhoven University of Technology, Netherlands;

15:00-15:20**DIFFRACTION BY DOUBLY-CONNECTED CAVITIES OF GENERAL FORM: RIGOROUS APPROACH**

M. Sagradian, E. Vinogradova, Macquarie University, Australia;

15:20-15:40**FINITE DIFFERENCE APPROXIMATION FOR THE FRACTIONAL HALF-CURL OPERATOR**

R. Kastner, Tel Aviv University, Israel;

15:40-16:00**HOPF SOLUTIONS OF MAXWELL EQUATIONS: ANALYSIS AND SIMULATION BY FDTD**

A.M. Valverde, L.D. Angulo, M.R. Cabello, A.R. Bretones, R.G. Martin, S.G. Garcia, University of Granada, Spain;

16:20-16:40**NON-SYMMETRIC ELECTROMAGNETIC OSCILLATIONS IN PERFECTLY CONDUCTING SLOTTED SPHERICAL SHELLS**

E.D. Vinogradova, Macquarie University, Australia;

16:40-17:00**ANALYTICAL REGULARIZATION METHOD FOR WAVE DIFFRACTION BY TOROIDAL BODIES AND SCREENS OF REVOLUTION**

Yu.A. Tuchkin, GTU, Turkey; S.B. Panin, TUBITAK-MRC, Turkey; I. Efe, GTU, Turkey;

17:00-17:20**DIFFRACTION BY A TRUNCATED SLAB LYING ON A PEC PLATE**

V. Daniele, G. Lombardi, R.S. Zich, Politecnico di Torino-LINKS, Italy

17:20-17:40**THE PERTURBATION TO FIELDS AND CURRENTS BY ROUNDING CORNERS ON A SCATTERER**

P.D. Smith, A.J. Markowskei, Macquarie University, Australia;

17:40-18:00**MACHINE LEARNING IN ELECTROMAGNETICS: A REVIEW AND SOME PERSPECTIVES FOR FUTURE RESEARCH**

D. Erricolo, P.-Y. Chen, A. Rozhkova, E. Torabi, University of Illinois at Chicago, IL, United States; H. Bagci, A. Shamim, X. Zhang, King Abdullah University of Science and Technology, Saudi Arabia;

18:00-18:20**RADAR DETECTION ANALYSIS THROUGH WALLS**

M. Charnley, Rutgers University United States; A.W. Wood, AFIT, United States;

WEDNESDAY SEPTEMBER 11 - 08:20

ROOM ANDALUCIA 3 **SESSION 33 - ICEAA****METAMATERIALS AND METASURFACES**

Chair 1 A. Epstein - Chair 2 G. Klotz

08:20-08:40**RAY-OPTICAL MODELLING OF SCATTERING BY ENGINEERED ELECTROMAGNETIC SURFACES**

Y.L.C. de Jong, CRC, Canada;

08:40-09:00**ARTIFICIAL MATERIAL FOR PATCH ANTENNA GAIN ENHANCEMENT AND ITS APPLICATION IN MICROWAVE FREE-SPACE METHOD**

Y.J. Zhang, T. Imahori, Y. Fujita, Ryukoku University, Japan;

09:00-09:20**PATH LOSS COMPENSATED CO-POLARIZED STACKED ANTENNAS WITH PROGRESSIVE OFFSET ZIM FOR MMWAVE 5G BASE STATIONS***G.S. Karthikeya, M.P. Abegaonkar, S.K. Koul, IIT Delhi, India;***09:20-09:40****EFFECT OF UNIT CELL ARRANGEMENTS IN NEAR FIELD TRANSFORMATION LATTICE ON APERTURE EFFICIENCY OF RESONANT CAVITY ANTENNA***S. Shrestha, B. Mohamadzade, A.A. Baba, R.M. Hashmi, Macquarie University, Australia;***09:40-10:00****EXPLOITING THE PROPERTIES OF METAGRATINGS FOR DESIGNING RECTANGULAR WAVEGUIDE MODE CONVERTERS***V.K. Killamsetty, A Epstein, Technion-Israel Institute of Technology, Israel;***10:00-10:20****ALL-METAL POLARIZATION CONVERSION METAMATERIAL LENS FOR HIGH POWER MICROWAVE APPLICATIONS***X. Zhao, C. Yuan, Qi. Zhang, National University of Defense Technology, China;***10:40-11:00****SUPPRESSING GRATING LOBES IN ANTENNA ARRAYS USING METAGRATINGS***Y. Kerzhner, A. Epstein, Technion israel institute of technology, Israel;***11:00-11:20****ASYMPTOTIC ANALYSIS OF CHIRPED GAUSSIAN PULSE PROPAGATION IN A METAMATERIAL MEDIUM***C. Balictsis, Hellenic Telecommunications and Post Commision-EETT, Greece;***11:20-11:40****FABRY-PÉROT BIANISOTROPIC METASURFACES FOR PERFECT ANOMALOUS REFRACTION***S.W. Marcus, A. Epstein, Technion-Israel Institue of Technology, Israel;***11:40-12:00****STUDY AND OPTIMIZATION OF A NON-FOSTER CIRCUIT FOR THE DESIGN OF WIDEBAND METASURFACES***C. Fisé, C. Martel, ONERA/DEMR, France; A.L. Franc, N. Raveu, LAPLACE, France;***12:00-12:20****DETECTING SPATIAL COHERENCE OF LIGHT WITH PLANAR METALLIC METAMATERIALS***T. Frank, O. Buchnev, T. Cookson, M. Kaczmarek, P. Lagoudakis, V.A. Fedotov, University of Southampton, United Kingdom;***12:20-12:40****PRINTED CIRCUIT BOARD (PCB) METAGRATINGS FOR PERFECT ANOMALOUS REFRACTION: THEORY AND EXPERIMENT***O. Rabinovich, Y. Komarovskiy, D. Dikarov, A. Epstein, Technion-Israel Institute of Technology, Israel;***14:00-14:20****EXPERIMENTAL RESULTS FOR A METAMATERIAL LUNEBURG LENS***D. Ribeiro, F. Beltran-Mejia, J. Ribeiro, National Institute of Telecommunications, Brazil;***14:20-14:40****NEAR-FIELD SHAPING BY LEAKY-WAVE METASURFACES: OAM AND BESSEL BEAMS SYNTHESIS***M. Bodehou, C. Craeye, I. Huynen, Université catholique de Louvain, Belgium;***14:40-15:00****TWO-ORDERS FAST MULTIPOLE ANALYSIS OF META-ATOMS***G. Klotz, N. Malléjac, CEA/DAM, France; S. Enoch, Institut Fresnel, France;*

WEDNESDAY SEPTEMBER 11 -15:00

ROOM ANDALUCIA 3 **SESSION 34 - ICEAA****NOVEL ANTENNAS AND FREQUENCY-SELECTIVE STRUCTURES****Organized by Z. Shen**

Chair 1 Z. Shen - Chair 2 G. Wen

15:00-15:20**AN ORTHOGONAL LINEAR POLARIZATION CONVERTING FSS FOR WAVE POLARIZED IN ARBITRARY DIRECTION***S.-Y. Wang, W. Geyi, Nanjing University of Information Science and Technology, China;***15:20-15:40****3-D DUAL-BAND FSSS BASED ON MULTIPLE SQUARE COAXIAL WAVEGUIDES***W. Tang, Z. Yu, J. Zhu, C. Wang, X. Yang, Nanjing Normal University, China;***15:40-16:00****A DUAL-BAND FREQUENCY SELECTIVE RASORBER DESIGN***H. Wang, J. Qin, T. Jiang, Harbin Engineering University, China; B. Cao, Marine Design & Research Institute of China, China;***16:20-16:40****60-GHZ PHASED TRANSMITARRAY WITH HIGH GAIN AND LOW PROFILE***P.-Y. Feng, S.-W. Qu, University of Electronic Science and Technology of China, China;***16:40-17:00****LIQUID CRYSTAL BASED MINIATURIZED TUNABLE FSS DESIGN***G. Yang, X. Yang, J. Yu, Q. Wu, F. Meng, Harbin Institute of Technology, China;***17:00-17:20****A HIGH-Q AND LOW-COST, TERAHERTZ FREQUENCY SELECTIVE STRUCTURE***A. Khurum Rashid, Namal Institute, Pakistan; Q. Zhang, Southern University of Science and Technology, China;***17:20-17:40****INTEGRATED CODING METASURFACE IN A SINGLE-LAYERED PRINTED CIRCUIT BOARD***Y. Shen, J. Yang, W. Dou, S. Hu, Southeast University, China;***17:40-18:00****MEASUREMENT OF MATERIAL PERMITTIVITY UNDER CONDITION OF HIGH TEMPERATURE BASED ON OPEN CAVITY TECHNIQUE IN MMW WAVELENGTHS***S.L. Fan, H.F. Meng, W.B. Dou, Southeast University, China;***18:00-18:20****ARBITRARY MANIPULATION OF ORTHOGONAL POLARIZATIONS FOR MULTI-FUNCTIONALITY VIA A METASURFACE***L.B. Yan, A.Q. Liu, Z.X. Shen, Nanyang Technological University, Singapore;*

WEDNESDAY SEPTEMBER 11 -08:20

ROOM ANDALUCIA 2 **SESSION 35 - ICEAA****RADIATION, PROPAGATION, AND SCATTERING OF ELECTROMAGNETIC WAVES IN PLASMAS AND METAMATERIALS****Organized by A.V. Kudrin**

Chair 1 A.V. Kudrin - Chair 2 S.P. Skobelev

08:20-08:40**SURFACE AND VOLUME PLASMONS OF SPHEROIDAL METAL NANOPARTICLES***I.A. Pavlichenko, University of Nizhny Novgorod, Russia;*

08:40-09:00**RADIATION CHARACTERISTICS OF A RADIAL ELECTRIC DIPOLE IN THE PRESENCE OF AN INHOMOGENEOUS DIELECTRIC BODY OF REVOLUTION***E. Semernya, S. Skobelev, Moscow Institute of Physics and Technology, Russia;***09:00-09:20****DESIGN AND NUMERICAL CHARACTERIZATION OF A REALISTIC PLASMA DIPOLE***P. De Carlo, G. Mansutti, M. Magarotto, A.D. Capobianco, D. Pavarin, University of Padova, Italy; A. Tuozi, C. Facchinetti, Italian Space Agency, Italy;***09:20-09:40****DIFFRACTION OF AN ELECTROMAGNETIC LAGUERRE-GAUSSIAN BEAM BY THE END OF A SEMI-INFINITE GYROTROPIC CYLINDER***V.A. Es'kin, A.V. Kudrin, University of Nizhny Novgorod, Russia;***09:40-10:00****PROPAGATION OF TRANSVERSE-MAGNETIC WAVES IN A WAVEGUIDE FILLED WITH MULTIPERIODICALLY MODULATED DIELECTRIC MEDIUM***E.A. Gevorkyan, Plekhanov Russian University of Economics, Russia;***10:00-10:20****AN EIGENFUNCTION EXPANSION METHOD FOR THE ANALYSIS OF THE SOURCE-EXCITED FIELDS IN A MAGNETOPLASMA***A.V. Kudrin, E.Yu. Petrov, University of Nizhny Novgorod, Russia; T.M. Zaboronkova, R.E. Alekseev Technical University of Nizhny Novgorod, Russia; A.S. Zaitseva, University of Nizhny Novgorod, Russia***10:40-11:00****RECEPTION OF QUASI-ELECTROSTATIC WAVES BY DIPOLE ANTENNAS IN A RESONANT MAGNETOPLASMA***E.A. Shirokov, Russian Academy of Sciences, Russia; A.G. Demekhov, Polar Geophysical Institute, Russia;***11:00-11:20****RESULTS AND PROSPECTS OF APPLICATION OF THE DOUBLE WEIGHTED FOURIER TRANSFORM (DWFT) TO PROBLEMS OF RADIO WAVE PROPAGATION IN INHOMOGENEOUS MEDIA***S.I. Knizhin, M.V. Tinin, Irkutsk State University, Russia;***11:20-11:40****STATISTICAL CHARACTERISTICS OF A RADIOWAVE PROPAGATING IN A MULTISCALE RANDOMLY INHOMOGENEOUS PLASMA***M.V. Tinin, S.I. Knizhin, Irkutsk State University, Russia;*

WEDNESDAY SEPTEMBER 11 - 11:40

ROOM ANDALUCIA 2 **SESSION 36 - ICEAA****ADVANCED PROCESSING TECHNIQUES FOR RCS, RADAR IMAGING, AND ANTENNA MEASUREMENT APPLICATIONS****Organized by I. LaHaie**

Chair 1 I. LaHaie - Chair 2 M. Moghaddam

11:40-12:00**AN EFFICIENT BASIS FOR DECOMPOSITION OF CAVITY RETURNS IN INVERSE SYNTHETIC APERTURE RADAR (ISAR) MEASUREMENTS USING BASIS PURSUIT***I.J. LaHaie, G.D. Dester, M.H. Hawks, Centauri, United States;***12:00-12:20****DEEP LEARNING FOR ORGANIC CLUTTER DETECTION IN RADAR CROSS SECTION DATA***M. Wilmanski, G. Dester, M. Hawks, Centauri, United States; R. Smith, Consultant, United States***12:20-12:40****NEAR-FIELD HIGH-RESOLUTION IMAGING BASED ON INVERSE EQUIVALENT SOURCE METHODS***A. Azhar, O. Neitz, J. Knapp, Technical University of Munich, Germany; R. Baumgartner, G. Mitic, Siemens AG, Germany; T.F. Eibert, Technical University of Munich, Germany;***14:00-14:20****REVISITING PHASELESS NEAR-FIELD ANTENNA MEASUREMENTS VIA MODELLING NEAR-FIELD MEASURED DATA IN FULL-WAVE SOLVERS***V. Manohar, Y. Rahmat-Samii, University of California at Los Angeles, CA, United States;***14:20-14:40****RETRIEVAL OF SUBSURFACE SOIL MOISTURE PROFILES FROM L-BAND AND P-BAND REFLECTOMETRY***A. Azemati, A. Etmnan, A. Tabatabaeejad, M. Moghaddam, USC, CA, United States;***14:40-15:00****DIFFERENT MEASURES IN SINGULAR VALUE OPTIMIZATION FOR ANTENNA CHARACTERIZATION***A. Capozzoli, C. Curcio, A. Liseno, Università di Napoli Federico II, Italy;***15:00-15:20****FULLY PROBE CORRECTED SPHERICAL NEAR FIELD MEASUREMENTS WITH ARBITRARY OFFSET AND MINIMUM SAMPLING USING THE TRANSLATED-SWE ALGORITHM***F. Saccardi, F. Mioc, A. Giacomini, MVI, Italy; P. O. Iversen, Orbit-FR, United States; L. J. Foged, MVI, Italy;***15:20-15:40****ON THE PRACTICAL EFFECTIVENESS OF THE NONREDUNDANT SPHERICAL NF-FF TRANSFORMATION FOR OFFSET MOUNTED LONG AUTS***F. D'Agostino, F. Ferrara, C. Gennarelli, R. Guerriero, M. Migliozzi, University of Salerno, Italy;***15:40-16:00****MEASURING G/T OF ACTIVE ANTENNAS USING PLANAR NEAR-FIELD SCANNERS***B. Walkenhorst, A.C. Newell, NSI-MI Technologies, United States;*

WEDNESDAY SEPTEMBER 11 - 16:20

ROOM ANDALUCIA 2 **SESSION 37 - ICEAA****ELECTROMAGNETIC PROPERTIES OF MATERIALS**

Chair 1 S. Di Meo - Chair 2 Y. Hao

16:20-16:40**UNIQUE SOLUTION TRANSMISSION-ONLY APPROACH FOR DETERMINATION OF DIELECTRIC PROPERTIES OF SUBSTRATES***C. Niamien, ESIGELEC, IRSEEM, France;***16:40-17:00****PRELIMINARY STUDY ON THE INTER-AND INTRA-SPECIES VARIABILITY FOR THE DIELECTRIC PERMITTIVITY OF ANIMAL KIDNEY***S. Di Meo, Università degli Studi di Pavia, Italy; J. Bonello, I. Farhat, L. Farrugia, University of Malta, Malta; M. Pasion, Università degli Studi di Pavia, Italy; C. V Sammut, University of Malta, Malta; G. Matrone, Università degli Studi di Pavia, Italy;***17:00-17:20****COMPOSITE LUNEBURG LENSES DESIGNED WITH HYPERUNIFORM DISORDERED STRUCTURE***H. Zhang, Q. Cheng, Y. Hao, Queen Mary University of London, United Kingdom;***17:20-17:40****INVESTIGATION OF RADIOFREQUENCY ION HEATING IN THE MAGNETOPLASMA OF AN ECR ION TRAP***G. Torrisi, D. Mascali, INFN-LNS, Italy; A. Galatà, INFN-LNL, Italy; L. Celona, G. Mauro, E. Naselli, INFN-LNS, Italy; G. Sorbello, Università degli Studi di Catania, Italy; S. Gammino, INFN-LNS, Italy;*

WEDNESDAY SEPTEMBER 11 - 08:20

ROOM ANDALUCIA 1 **SESSION 38 - ICEAA****PROGRESS IN NEW ANTENNA DESIGNS**

Organized Z.N. Chen

Chair 1 Z.N. Chen - Chair 2 Q. Zhang

08:20-08:40**DESIGN OF A C-BAND REFLECTARRAY ANTENNA FOR NEARFIELD APPLICATIONS***T.T. Chia, T.K. Chua, Z.N. Chen, National University of Singapore, Singapore;***08:40-09:00****SYSTEMATIC DESIGN OF AN ULTRA-WIDEBAND SIX-PORT MULTI-MODE ANTENNA ELEMENT USING SYMMETRY PROPERTIES OF CHARACTERISTIC MODES***N. Peitzmeier, D. Manteuffel, Leibniz University Hannover, Germany;***09:00-09:20****DUAL-AND WIDE-BAND DUAL-SENSE CIRCULARLY POLARIZED CPW-FED SLOT ANTENNA WITH A T-SHAPED GROUND STUB***H. Zhang, T. Zhong, Air Force Engineering University, China; Y. Zeng, Unit 95100, China;***09:20-09:40****LOW-PROFILE WIDEBAND HYBRID METASURFACE ANTENNA ARRAYS***X.-S. Yang, N.-S. Nie, University of Electronic Science and Technology of China, China; Z. N. Chen, W. Liu, National University of Singapore, Singapore;***09:40-10:00****FIXED-FREQUENCY BEAM SCANNING LEAKY-WAVE ANTENNA USING SINUSOIDALLY MODULATED SPOOF SURFACE PLASMON POLARITONS***X.-L. Tang, Q. Zhang, Y. Chen, The University of Electronic Science and Technology of China, China;***10:00-10:20****AN ACTIVE METASURFACE FOR WIDE ANGLE BEAM SCANNING ANTENNA***J. Lin, D. Li, W. Yu, Shanghai Jiao Tong University, China;***10:40-11:00****EFFECT OF THE INTERFERENCE FROM CONDUCTING PLATES ON OAM BASED WIRELESS COMMUNICATION***L. Wang, C. Yang, H.-D. Bruens, C. Schuster, Hamburg University of Technology, Germany;***11:00-11:20****DESIGN OF POLARIZATION RECONFIGURABLE ANTENNA LOADED METASURFACE***H. Yu, Z. Li, Communication University of China, China;*

WEDNESDAY SEPTEMBER 11 - 11:20

ROOM ANDALUCIA 1 **SESSION 39 - ICEAA****INVERSE PROBLEMS, CLOAKING, AND NONLINEAR MEDIA**

Organized Y. Shestopalov

Chair 1 Y. Shestopalov - Chair 2 L. Matekovits

11:20-11:40**SYNTHESIS OF IMPEDANCE CYLINDRICAL METASURFACE FOR THE GIVEN POLARIZATION ELLIPSE OF CONFORMAL PHASED ANTENNA ARRAY***A.I. Semenikhin, D.V. Semenikhina, Y.V. Yukhanov, P.V. Blagovisnyy, Southern federal university, Russia;***11:40-12:00****OPTIMIZATION-BASED ANALYSIS OF INVERSE PROBLEMS OF DESIGNING MAGNETIC CLOAKING AND SHIELDING DEVICES***G.V. Alekseev, Y.E. Spivak, A.V. Lobanov, Institute of Applied Mathematics FEB RAS, Russia; I.V. Vinogradov, Far Eastern Federal University, Russia;***12:00-12:20****OPTIMIZATION METHOD IN 2D DC ELECTRIC FIELD CLOAKING AND SHIELDING***G.V. Alekseev, D.A. Tereshko, Institute of Applied Mathematics FEB RAS, Russia;***12:20-12:40****NUMERICAL STUDY OF NONLINEAR METAMATERIAL ROD***Y. Shestopalov, University of Gävle, Sweden; E. Smolkin, M. Snegur, Penza State University, Russia;***14:00-14:20****SYNTHESIS OF AN ANISOTROPIC SURFACE THAT REFLECTS SEVERAL INCIDENT PLANE WAVES IN A PRESCRIBED DIRECTION WITH A REQUIRED POLARIZATION***T. Yu. Privalova, Yu.V. Yukhanov, E.E. Privalov, T.O. Amirokov, Southern Federal University, Russia;***14:20-14:40****NONLINEAR INVERSE-SCATTERING METHODS IN LEBESGUE SPACES APPLIED TO MICROWAVE IMAGING PROBLEMS***C. Estatico, A. Fedeli, M. Pastorino, A. Randazzo, University of Genoa, Italy;***14:40-15:00****RADIO-BEAM DOA ESTIMATION USING ALL-OPTICAL ULTRA-WIDEBAND PROCESSING***T.N. Bakhvalova, M.E. Belkin, I.V. Gladyshev, and A.S. Sigov, Russian Technological University, Moscow, Russia***15:00-15:20****ACCURATE CUTOFF WAVENUMBERS OF A WAVEGUIDE PERTURBED BY AXIALLY ALIGNED INNER CONDUCTORS***P.D. Smith, E.D. Vinogradova, Macquarie University, Australia; Y.V. Shestopalov, University of Gävle, Sweden;*

WEDNESDAY SEPTEMBER 11 -15:20

ROOM ANDALUCIA 1 **SESSION 40 - ICEAA****TECHNOLOGIES FOR MM AND SUB-MM WAVES**

Chair 1 G. Addamo - Chair 2 A. Clemente

15:20-15:40**DESIGN OF FULLY-PLANAR CSRR-BASED SUBSTRATE INTEGRATED WAVEGUIDE CIRCUITS***O. Christogeorgos, M.-T. Passia, M. Nitas, T.V. Yioultis, Aristotle University of Thessaloniki, Greece;***15:40-16:00****NON-CONTACT ANTENNA CHARACTERIZATION VIA ONE-PORT NETWORK CALIBRATION***S. Sahin, N.K. Nahar, K. Sertel, The Ohio State University, OH, United States;***16:20-16:40****AN EFFECTIVE SOLUTION FOR DESIGNING WIDEBAND 3-LAYER D-BAND TRANSMITARRAYS IN PCB TECHNOLOGY***F. Foglia Manzillo, A. Clemente, J.L. Gonzalez-Jiménez, CEA-Leti, France;***16:40-17:00****RECTANGULAR GROOVED POLARIZER WITH ROUND EDGES FOR THE HIGH POWER MILLIMETER WAVE SYSTEM***D. Xia, C. Liu, Z. Wang, Huazhong University of Science and Technology, China;*

17:00-17:20**ON THE EXISTENCE OF TERAHERTZ PLASMONS IN TWO-DIMENSIONAL SEMICONDUCTOR HETEROSTRUCTURES**

H.T. Abbas, L.N. Aljhmami, Texas A&M University at Qatar, Qatar; Q.H. Abbasi, University of Glasgow, United Kingdom; K.A. Qaraqe, Texas A&M University at Qatar, Qatar;

17:20-17:40**SYSTEM BUDGET TO SYSTEM REALIZATION – A 5G MM-WAVE BEAMFORMER PERSPECTIVE**

A. Gupta, V. Aggarwal, R. Bhattacharya, T. Kukal, S. Singh, Cadence Design System, India; S. Aniruddhan, IIT Madras, India;

17:40-18:00**INTEGRATION OF MICROWAVE COMPONENTS THROUGH SELECTIVE LASER MELTING**

G. Addamo, O.A. Peverini, CNR-IEIIT, Italy; D. Manfredi, IIT, Italy; F. Calignano, Politecnico di Torino, Italy; G. Virone, M. Lumia, CNR-IEIIT, Italy;

18:00-18:20**MORPHOLOGICAL AND STRUCTURAL PROPERTIES OF METAMATERIAL BASED ON ITO/SAPPHIRE/ZNS/AL SUPERLATTICE**

B. Akin, S. Altindal, Gazi University, Turkey; J. Farazin, University of Mohaghegh Ardabili, Iran; G. Pirgholi-Givi, Y. Azizian-Kalandaragh, Sabalan University of Advanced Technologies, Iran;

WEDNESDAY SEPTEMBER 11 - 08:40

ROOM SEMINARS 3-4-5 **SESSION 41 - ICEAA****ADVANCES IN FREQUENCY-DOMAIN CEM TECHNIQUES AND APPLICATIONS**

Organized by B. Notaros

Chair 1 B. Notaros - Chair 2 V. de la Rubia

08:40-09:00**MODEL ORDER REDUCTION ZERO-POLE CHARACTERIZATION AND COMPUTER-AIDED DESIGN OF MICROWAVE CIRCUITS**

B. Carrasco, V. de la Rubia, Universidad Politecnica de Madrid, Spain;

09:00-09:20**METHOD OF MOMENT SOLUTION OF SURFACE INTEGRAL EQUATIONS FOR ARBITRARY 2D PERIODIC COMPOSITE MATERIAL STRUCTURES**

B.M. Kolundzija, University of Belgrade, Serbia; M.M. Kostic, WIPL-D, Serbia;

09:20-09:40**A PAINLESS AUTOMATIC GOAL-ORIENTED HP-ADAPTIVE STRATEGY FOR H(CURL) PROBLEMS**

I. Gomez-Revuelto, Universidad Politécnica de Madrid, Spain; L.E. Garcia-Castillo, University Carlos III of Madrid, Spain; V. Darrigrand, D. Pardo, University of the Basque Country (EHU-UPV), Spain; T. Chaumont-Frelet, INRIA, France;

09:40-10:00**DO WE STILL NEED BODY-OF-REVOLUTION TECHNIQUES IN COMPUTATIONAL ELECTROMAGNETICS?**

A.A. Kucharski, Wroclaw University of Science and Technology, Poland;

10:00-10:20**RECENT ADVANCES IN ENTIRE-DOMAIN ANALYSIS OF 2-D STRUCTURES USING METHOD OF MOMENTS**

D.I. Olcan, J. Perovic, B. Kolundzija, A Djordjevic, University of Belgrade, Serbia;

10:40-11:00**FAST MODELING OF IMPERFECTLY CONDUCTING WIRE/SURFACE STRUCTURES IN LAYERED UNIAXIAL MEDIA**

S. Zeng, D.R. Wilton, J. Chen, University of Houston, TX, United States;

11:00-11:20**OVERVIEW OF SOME ADVANCES IN HIGHER ORDER FREQUENCY-DOMAIN CEM TECHNIQUES**

B.M. Notaros, S.B. Manic, C. Key, J. Harmon, D. Estep, Colorado State University, CO, United States;

11:20-11:40**APPLICATIONS OF THE DIRECT DOMAIN DECOMPOSITION BASED ON CYLINDRICAL PORTS IN THE HYBRID FINITE ELEMENT/MODAL ANALYSIS METHOD**

A. Gomez Garcia, Universidad de Extremadura, Spain; M. A. González, Universidad Politécnica de Madrid, Spain; R. Gomez Alcalá, Universidad de Extremadura, Spain; J. Garcia, Universidad Politécnica de Madrid, Spain; Y. Campos-Roca, Universidad de Extremadura, Spain; J. M. Gil, Universidad Politécnica de Madrid, Spain; J. Rubio, Universidad de Extremadura, Spain;

11:40-12:00**TUNING THE FILTER RESPONSES WITH GRAPHENE BASED RESONATORS**

A.Ž. Ilic, Institute of Physics Belgrade, Serbia; B.M. Bukvic, University of Belgrade, Serbia; D. Budimir, University of Westminster, United Kingdom; M.M. Ilic, University of Belgrade, Serbia;

12:00-12:20**SPECTRAL PROJECTION MODEL FOR ANALYZING ELECTROMAGNETIC SCATTERING FROM TWO-DIMENSIONAL CONDUCTING OBJECTS**

D. Kasilingam, A. Fascia, V. Sivalingam, University of Massachusetts Dartmouth, MA, United States;

12:20-12:40**HOMOGENIZATION THEORY FOR SUBSTRATE-INTEGRATED METASURFACE AND ITS APPLICATIONS IN SCALING OF ELECTROMAGNETIC DEVICES**

Y. He, Y. Li, Tsinghua University, China; P.-Y. Chen, University of Illinois at Chicago, IL, United States;

14:00-14:20**CONFORMAL DUAL BASIS FUNCTIONS ON CURVILINEAR QUADRILATERALS FOR CALDERON PRECONDITIONING OF SURFACE INTEGRAL EQUATIONS**

K. Sertel, The Ohio State University, OH, United States

14:20-14:40**A REVIEW OF 3-D GREEN'S FUNCTIONS FOR INTEGRAL EQUATION MODELING OF ELECTROMAGNETIC SCATTERING FROM 1/2/3-D PERIODIC STRUCTURES USING EWALD TRANSFORMATION**

I. Stevanovic, Federal Office of Communications, Switzerland; A. Terzic, ETH Zurich, Switzerland; P. Crespo-Valero, IT'IS Foundation, Switzerland;

14:40-15:00**EVALUATION OF POTENTIAL AND IMPEDANCE INTEGRALS IN CASE OF SINGULAR BASES ALONG AXIALLY SYMMETRIC ANTENNAS**

A.J. Krmeta, B.M. Kolundzija, University of Belgrade, Serbia;

15:00-15:20**SPECTRAL ANALYSIS OF A FINITE-DIFFERENCE FREQUENCY-DOMAIN SOLVER BASED ON THE QUASI-TEM APPROXIMATION**

J.P. Donohoe, Mississippi State University, MS, United States;

15:20-15:40**DESIGN AND ANALYSIS OF NANO-OPTICAL NETWORKS CONSISTING OF NANOWIRES AND OPTIMIZED COUPLERS**

A. Altinoklu, G. Karaova, O. Ergul, Middle East Technical University, Turkey;

15:40-16:00**APPLICATION OF NON-SINGULAR LAPLACIAN REPRESENTATIONS TO ANALYTICAL EVALUATION OF 6-DIMENSIONAL INTEGRALS OF THE KERNEL OF VOLUMETRIC INTEGRAL EQUATION**

E. Bleszynski, M. Bleszynski, T. Jaroszewicz, Monopole Research.com, CA, United States;

16:20-16:40**SOLVING INVERSE EQUIVALENT SURFACE SOURCE PROBLEMS BY THE NORMAL ERROR SYSTEM OF NORMAL EQUATIONS***J. Kornprobst, O. Neitz, J. Knapp, R.A.M. Mauermayer, T.F. Eibert, Technical University of Munich, Germany;***16:40-17:00****ELECTRIC MULTIMODE EQUIVALENT NETWORK TECHNIQUE FOR MULTILAYER SHIELDED CIRCUITS BASED ON ARBITRARY RECTANGULAR ELEMENTS***C. Gomez Molina, F. Quesada Pereira, A. Alvarez Melcon, V.E. Boria, M. Guglielmi, Universidad Politecnica de Valencia, Spain;*

WEDNESDAY SEPTEMBER 11 - 17:00

ROOM SEMINARS 3-4-5 **SESSION 42 - IEEE APWC****VEHICULAR ANTENNAS**

Chair 1 S. Lenzini - Chair 2 J. Spurek

17:00-17:20**DIVERSITY ANTENNA FOR VEHICULAR COMMUNICATIONS IN MICROWAVE AND MM-WAVE BANDS***A. Pour Sohrab, P. Karadimas, Y. Huang, University of Glasgow, United Kingdom;***17:20-17:40****LOW PROFILE WIDEBAND 3D ANTENNA FOR ROOF-TOP LTE VEHICULAR APPLICATIONS***F. Melli, S. Lenzini, University of Modena and Reggio Emilia, Italy; M. Cerretelli, E. Coscelli, A. Notari, ASK Industries S.p.A, Italy; S. Selleri, University of Parma, Italy; L. Vincetti, University of Modena and Reggio Emilia, Italy;***17:40-18:00****REALIZATION OF CIRCULARLY POLARIZED ANTENNA ARRAY WITH PARASITIC PATCHES***J. Spurek, Z. Raida, Brno University of Technology, Czech Republic;*

WEDNESDAY SEPTEMBER 11 - 08:40

ROOM SEMINARS 6-7 **SESSION 43 - ICEAA****EMC/EMI/EMP**

Chair 1 D. de Villiers - Chair 2 J.F. Vega-Stavro

08:40-09:00**NUMERICAL COMPLEXITY STUDY OF SOLVING HYBRID MULTIPORT FIELD-CIRCUIT PROBLEMS FOR DIODE GRIDS***T. Wendt, C. Yang, Hamburg University of Technology, Germany; S. Grivet-Talocia, Politecnico di Torino, Italy; C. Schuster, Hamburg University of Technology, Germany;***09:00-09:20****A STUDY ON IMPACT OF COMPONENT AND MODULE-LEVEL REPLACEMENT ON ELECTROMAGNETIC COMPATIBILITY QUALIFICATION IN NUCLEAR POWER PLANTS***D.-J. Lee, J. Choo, Y.-M. Kim, Korea Institute of Nuclear Safety (KINS), Korea, South;***09:20-09:40****HYPERBAND ANTENNA DESIGN FOR RFI TESTING***J.C. Koech, P.G. Wiid, D.I.L. De Villiers, Stellenbosch University, South Africa;***09:40-10:00****EMI PERFORMANCE OF PWM SIGNAL***T. Jiang, T. Tan, K. Jiang, J. Qin, Harbin Engineering University, China;***10:00-10:20****SIMPLIFIED FLIP-FLOP GATE MODEL FOR EEMI INJECTION***L. Valbuena Reyes, University of New Mexico, NM, United States; G. Heileman, University of Arizona, AZ, United States; S. Hemmady, E. Schamiloglu, University of New Mexico, NM, United States;***10:40-11:00****A HAMILTON-JACOBI EQUATION FOR EVALUATING EEMI PROPAGATION IN A COMPUTING SYSTEM***L. Valbuena Reyes, University of New Mexico, NM, United States; G. Heileman, University of Arizona, AZ, United States; S. Hemmady, E. Schamiloglu, University of New Mexico, NM, United States;***11:00-11:20****A 3D THEORETICAL MODEL FOR EMP THERMAL RUNAWAY IN SEMICONDUCTOR DEVICES***C.B. Zhang, R.W. Zhang, T. Yan, Z.Q. Yang, W.T. Ren, Z.P. Zhu, Northwest Institute of Nuclear Technology, China;***11:20-11:40****MODELING RADIO-FREQUENCY EFFECTS ON A MICROCONTROLLER***T.J. Clarke, AFRL, United States; D.S. Guillette, University of New Mexico, NM, United States;***11:40-12:00****INTENTIONAL ELECTROMAGNETIC IRRADIATION OF A MICROCONTROLLER***D.S. Guillette, University of New Mexico, NM, United States; T.J. Clarke, AFRL, United States; C. Christodoulou, University of New Mexico, NM, United States;***12:00-12:20****VARIABLE-IMPEDANCE FEED STRUCTURE FOR IMPULSE RADIATING ANTENNA***J.F. Vega-Stavro, F. Albarracin-Vargas, Universidad Nacional de Colombia, Colombia;*

WEDNESDAY SEPTEMBER 11 - 14:00

ROOM SEMINARS 6-7 **SESSION 44 - ICEAA****ELECTROMAGNETIC APPLICATIONS TO BIOMEDICINE**

Chair 1 G. Lazzi - Chair 2 K. Saito

14:00-14:20**MRI COILS BASED ON ARTIFICIAL MATERIALS***A. Slobozhanyuk, ITMO University, Russia;***14:20-14:40****RECENT ADVANCES IN COMPUTATIONAL AND EXPERIMENTAL BIOELECTROMAGNETICS FOR NEUROPROSTHETICS***J.P. Stang, G. Chen, University of Southern California, CA, United States; P. Kosta, University of Utah, UT, United States; J. Paknahad, M. Machnoor, E. Iseri, J. Du, University of Southern California, CA, United States; D. Brizi, University of Pisa, Italy; K. Loizos, G. Lazzi, University of Southern California, CA, United States;***14:40-15:00****DEVELOPMENT AND PERFORMANCE EVALUATIONS OF MICROWAVE SNARE***K. Saito, M. Sugiyama, Chiba University, Japan;***15:00-15:20****WIRELESS POWER TRANSFER TO INTRA-ABDOMINAL IMPLANTS USING AN AROUND-THE-BODY LOOP ANTENNA***S. Ahmed, L. Sydänheimo, L. Ukkonen, T. Björninen, Tampere University, Finland;***15:20-15:40****COMPARISON OF RADIO FREQUENCY CURRENT AND MICROWAVE ENERGY FOR TRANSCATHETER RENAL DENERVATION***A. Rakhmadi, K. Saito, Chiba University, Japan;***15:40-16:00****WIDEBAND MODELLING OF THE DIELECTRIC PROPERTIES OF MUSCLE AS A FUNCTION OF HYDRATION***I. Farhat, L. Farrugia, D. Pollacco, J. Bonello, C. Sammut, University of Malta, Malta;*

16:20-16:40**APPLICATION OF THE DISCRETE DIPOLE APPROXIMATION IN MICROWAVE BREAST IMAGING**

S. Hosseinzadegan, A. Fhager, M. Persson, P. Meaney, Chalmers University of Technology, Sweden;

16:40-17:00**AN INVESTIGATION INTO THE USE OF CALNN CAPPED GOLD NANOPARTICLES FOR IMPROVING MICROWAVE HEATING.**

J. Bonello, University of Malta, Malta; F. Rossi, N. Thi Kim Thanh, University College London, United Kingdom; I. Farhat, L. Farrugia, C. V Sammut, University of Malta, Malta;

17:00-17:20**VERIFICATION OF ALGORITHM FOR AN I/Q-RADAR SYSTEM FOR BREATHING DETECTION IN AN INCUBATOR**

A. Marnach, D. Schmiech, A.R. Diewald, Hochschule Trier, Germany;

17:20-17:40**INNOVATIONS IN BIOMEDICINE: MEASURING PHYSIOLOGICAL PARAMETERS BECOMES AS SIMPLE AS APPLYING A PLASTER ON THE BODY**

R. Calzone, Politecnico di Torino, Italy; M. David Perez, R. Augustine, Uppsala University, Sweden; G. Pagana, LINKS foundation, Politecnico di Torino, Italy;

17:40-18:00**MICROWAVE DIELECTRIC PROPERTY BASED CLASSIFICATION OF MALIGNANCIES**

T. Yilmaz, Istanbul Technical University, Turkey;

THURSDAY SEPTEMBER 12 - 08:20

ROOM FALLA **SESSION 45 - IEEE APWC****SMART ANTENNAS AND ARRAYS**

Chair 1 A.R. Diewald - Chair 2 P. Mei

08:20-08:40**OPTIMIZATION OF ELLIPTICAL ANTENNA ARRAYS USING THE CUCKOO SEARCH ALGORITHM**

M. Khodier, Jordan Univeristy of Science and technology, Irbid, Jordan

08:40-09:00**DESIGN APPROACH FOR MODULAR MILLIMETER WAVE BEAMFORMING ANTENNA ARRAYS FOR 5G PICO-CELLS**

S. Seewald, D. Manteuffel, Leibniz University Hannover, Germany;

09:00-09:20**DESIGN OF A SIX-PATCH SERIES-FED TRAVELING-WAVE ANTENNA**

A.R. Diewald, S. Müller, Hochschule Trier, Germany;

09:20-09:40**OPTIMAL ANTENNA ARRAY TOPOLOGIES FOR ENERGY EFFICIENCY MAXIMIZATION BY EMPLOYING PARTICLE SWARM OPTIMIZATION**

Y.K. Huang, P. Karadimas, A. Pour Sohrab, University of Glasgow, United Kingdom;

09:40-10:00**ON THE OUTAGE PERFORMANCE OF LINE-OF-SIGHT MASSIVE MIMO WITH A FIXED-LENGTH UNIFORM LINEAR SPARSE ARRAY**

A. Farsaei, Eindhoven University of Technology, Netherlands; N. Amani, Chalmers University of Technology, Sweden; A. Alvarado, F. M. J. Willems, Eindhoven University of Technology, The Netherlands; U. Gustavsson, Ericsson Research, Sweden; R. Maaskant, University of Technology, Eindhoven, The Netherlands;

10:00-10:20**A LOW-PROFILE PATCH ANTENNA WITH MONOPOLE-LIKE RADIATION PATTERNS**

P. Mei, S. Zhang, Aalborg University, Denmark; X. Qi Lin, UESTC, China; G. Frølund Pedersen, Aalborg University, Denmark;

10:40-11:00**IMPLEMENTATION OF DYNAMIC DIRECTIONAL MODULATION WITH SOFTWARE DEFINED RADIO**

E.A. Cabrera-Hernández, J. Parrón-Granados, Universitat Autònoma de Barcelona, Spain; A. Tennant, The University of Sheffield, United Kingdom;

11:00-11:20**UWB LPDA DESIGN AND SIMULATIONS FOR JAMMING**

M. Asili, A. Orduyilmaz, M. Serin, TUBITAK-BILGEM, Turkey;

THURSDAY SEPTEMBER 12 - 11:20

ROOM FALLA **SESSION 46 - ICEAA****ADAPTIVE AND RECONFIGURABLE ANTENNAS**

Chair 1 R. Berro - Chair 2 P. Meyer

11:20-11:40**ELECTRIC BEAM-STEERING METAMATERIAL LEAKY-WAVE ANTENNA**

N. Javanbakht, B. Syrett, R. Amaya, Carleton University, Canada; J. Shaker, Communication Research Center, Canada;

11:40-12:00**LOW-PROFILE PATTERN RECONFIGURABLE ANTENNA FOR WIRELESS BODY AREA NETWORKS**

B. Mohamadzade, R.B.V.B. Simorangkir, R.M. Hashmi, S. Shrestha, Macquarie University, Australia;

12:00-12:20**A PATTERN DIVERSITY MICROSTRIP ANTENNA WITH SWITCHABLE SUM AND DIFFERENCE BEAMS IN E-AND H-PLANE**

S.-A. Malakooti, C. Fumeaux, University of Adelaide, Australia;

12:20-12:40**A NOVEL VERTICAL PATCH ANTENNA FOR PATTERN RECONFIGURATION**

M. Cao, X. Wang, H. Li, S. Yue, L. He, Beijing Institute of Space Long March, China;

14:00-14:20**TRANSMISSION LINE MODEL FOR LOSSY INVERTED F ANTENNA MINIATURIZATION**

R. Berro, S. Borries, C. Delaveaud, CEA LETI, France;

14:20-14:40**RECONFIGURABLE AND FREQUENCY TUNABLE INVERTED F ANTENNA BASED ON PLASMA TECHNOLOGY**

A. Karami-Horestani, M.T. Noghani, F. Sadeghikia, M.R. Dorbin, Aerospace Research Institute, Iran; F. Martin, Universitat Autònoma de Barcelona, Spain; M. Valipour, Aerospace Research Institute, Iran;

14:40-15:00**SCANNING APERTURE ANTENNAS WITH SPHERICAL SHELLS**

H. Groll, E. Zoemann, S. Pratschner, R. Langwieser, T. Pohl, TU Wien, Austria; A.F. Molisch, University of Southern California, CA, United States; C.F. Mecklenbraeuker, TU Wien, Austria;

15:00-15:20**A MODE-SWITCHED WIFI ANTENNA OFFERING FULL HEMISPHERICAL COVERAGE**

P. Meyer, Stellenbosch University, South Africa;

THURSDAY SEPTEMBER 12 - 15:20

ROOM FALLA **SESSION 47 - ICEAA****INVERSE SCATTERING AND REMOTE SENSING**

Chair 1 A. Coatanhay - Chair 2 E. Heyman

15:20-15:40**HF RADAR SCATTERING FROM A SEA SURFACE PERTURBED BY MULTIPLE SHIP WAKES***S.J. Anderson, University of Adelaide, Australia;***15:40-16:00****BEAM-BASED TIME-DOMAIN TOMOGRAPHIC INVERSE SCATTERING***R. Tuvi, E. Heyman, Tel Aviv University, Israel; T. Melamed, Ben-Gurion University of the Negev, Israel;***16:20-16:40****HRRP FEATURE EXTRACTION AND RECOGNITION METHOD OF RADAR GROUND TARGET USING CONVOLUTIONAL NEURAL NETWORK***B.C. Ding, P.H. Chen, Beihang University, China;***16:40-17:00****IMAGING THE INTERIOR OF SMALL SOLAR BODIES: TOWARDS A QUANTITATIVE APPROACH***C. Eyraud, Institut Fresnel, France; L.-I. Sorsa, Tampere University, Finland; A. Hérique, IPAG, France; J.-M. Geffrin, Institut Fresnel, France; S. Pursiainen, Tampere University, Finland; W. Kofman, IPAG, France;***17:00-17:20****ROUGH PATHS THEORY APPLIED TO ANALYZE THE ELECTROMAGNETIC FIELD SCATTERED BY A TIME VARYING SEA SURFACE***A. Coatanhay, ENSTA Bretagne, France;***17:20-17:40****A BAYESIAN APPROACH FOR SHIP DETECTION AIDED BY CLUTTER PARAMETERS ESTIMATION***M.M. Lan, S.H. Du, K.Z. Wang, Shanghai Jiao Tong University, China;***17:40-18:00****A HIGH MANEUVERING TARGET DETECTION RADAR WITH SUB-BAND DIVISION***S.H. Du, M.M. Lan, K.Z. Wang, Shanghai Jiao Tong University, China;***18:00-18:20****A FAR-FIELD TRANSFORMATION PROCEDURE FOR MONOSTATIC LINEAR SAMPLING METHOD IMAGING***H.F. Alqadah, M. Burfeindt, US Naval Research Laboratory, United States;*

THURSDAY SEPTEMBER 12 - 08:20

ROOM ANDALUCIA 3 **SESSION 48 - IEEE APWC****PROPAGATION MODELS**

Chair 1 S.J. Anderson - Chair 2 E. Plouhinec

08:20-08:40**DIFFUSE TERRESTRIAL SCATTER CONTRIBUTIONS TO MULTI-HOP SKYWAVE PROPAGATION IN OTH RADAR SYSTEMS***S.J. Anderson, University of Adelaide, Australia;***08:40-09:00****2.4GHZ RF PROPAGATION MEASUREMENTS AND MODELING IN A PADDY FIELD FOR A WIRELESS SENSOR NETWORK***T. Hamasaki, D. Kuramoto, Y. Yamaoka, Hiroshima Institute of Technology, Japan;***09:00-09:20****MERCURYDPM ADAPTATION FOR ELECTROMAGNETIC MICROSCOPIC DEM SIMULATION***K.M. Zeyde, Ural Federal University, Russia;***09:20-09:40****UTD HUMAN BODY MODELS COMPARISON BASED ON DUAL MOTION CAPTURE AND RADIO MEASUREMENTS***E. Plouhinec, CREC Saint-Cyr, France; B. Uguen, IETR UMR CNRS 6164, France;***09:40-10:00****COMPARING ONE-MINUTE RAIN RATE FROM TRMM SATELLITE DATA AND REC. ITU-R P.837-7 IN TROPICAL AND TEMPERATE SITES***G. Rimven, K. Paulson, T. Bellerby, University of Hull, United Kingdom;***10:00-10:20****SSPE METHOD INCLUDING BACKWARD TERM FOR AN EM PROPAGATION REAL CASE STUDY***J.M. Mendes, C.G. Rego, D. Parada, Federal University of Minas Gerais, Brazil; C.G. Batista, Federal University of São João del Rei, Brazil; D. Guevara, Francisco de Paula Santander University, Colombia;***10:40-11:00****SOMMERFELD HALF-SPACE AND PATH LOSS IMPROVEMENT IN NEAR-GROUND WAVE PROPAGATION***M.H. Bezerra Cardoso, Orange, France; S. Mostarshedi, J.-M. Laheurte, Université Paris-Est, France;***11:00-11:20****CO-AND CROSSPOLAR SCATTERING MEASUREMENTS AT SLIGHTLY ROUGH WALLS FOR INDOOR PROPAGATION CHANNELS AT MM WAVES***I. Gaspard, University of Applied Sciences Darmstadt, Germany;***11:20-11:40****MODELING PROPAGATION LOSS IN SITE-SPECIFIC NON-UNIFORM DIELECTRIC URBAN ENVIRONMENTS USING VTRPE***P.E. Cadette, W.L. Jones, Central Florida Remote Sensing Lab, UCF, FL, United States;***11:40-12:00****ANALYSIS OF S-BAND MICROWAVE PROPAGATION IN A CLOSED METAL CHAMBER***L. Zhang, T. Ding, Jimei University, China; Y. Wang, Shenyang Aircraft Design and Research Institute, China;***12:00-12:20****THE INTRUSIVE PCE-BASED METHOD FOR UNCERTAINTY CALCULATION IN RAY-TRACING ANALYSIS OF 5G EM WAVE PROPAGATION***P. Gorniak, Poznan University of Technology, Poland;*

THURSDAY SEPTEMBER 12 - 14:00

ROOM ANDALUCIA 3 **SESSION 49 - ICEAA****NEW TRENDS IN ELECTROMAGNETIC MODELING FOR EMC AND SI/PI****Organized by F. Canavero**

Chair 1 F. Canavero - Chair 2 P. Triverio

14:00-14:20**ADJOINT TIME-DOMAIN SENSITIVITY OF RETARDED PEEC USING THE NUMERICAL INVERSION OF LAPLACE TRANSFORM***L. Lombardi, Micron Semiconductors, Italy; M.I Nakhla, Carleton University, Canada; G. Antonini, Università degli Studi dell'Aquila, Italy; F. Ferranti, IMT Atlantique, France;***14:20-14:40****EFFICIENT TIME-DOMAIN MODELING AND SIMULATION OF PASSIVE BANDPASS SYSTEMS***Y. Ye, D. Spina, D. Deschrijver, W. Bogaerts, T. Dhaene, Ghent University, Belgium;*

14:40-15:00**MODAL NETWORK SYNTHESIS FOR ARBITRARY INTERCONNECTION STRUCTURES INCLUDING RADIATION***S. Südekum, M. Leone, Otto-von-Guericke University Magdeburg, Germany;***15:00-15:20****MODELING OF RADIATED EMISSION CAUSED BY COAXIAL-TO-MICROSTRIP TRANSITION***P.-J. Li, C.-C. Chou, T.-L. Wu, NTU, Taiwan;***15:20-15:40****HIGH FREQUENCY MODELING OF PCB INTERCONNECTS WITH THE THIN WIRE METHODS: SOME APPLICATIONS TEST CASES***A. Guena, THALES SIX, France; F. Costa, Laboratoire SATIE, France; B. Goral, THALES SIX, France;***15:40-16:00****ACTIVE SHAPING OF VOLTAGE/CURRENT IN TRANSMISSION LINES-EMC/SI APPLICATIONS***A. Al Ibrahim, C. Chauvière, P. Bonnet, Université Clermont Auvergne-CNRS, France;***16:20-16:40****EFFICIENT ELECTROMAGNETIC MODELING OF ON-CHIP INTERCONNECTS WITH A HYBRID 2D-3D DIFFERENTIAL SURFACE ADMITTANCE APPROACH***S. Sharma, P. Triverio, University of Toronto, Canada;***16:40-17:00****AN ENHANCED DIFFERENTIAL SURFACE ADMITTANCE OPERATOR FOR THE SIGNAL INTEGRITY MODELING OF INTERCONNECTS***M. Huynen, K.Y. Kapusuz, D. De Zutter, D. Vande Ginste, Ghent University, Belgium;***17:00-17:20****A 3D PASSIVITY-BASED ADAPTIVE ALGORITHM FOR AUTOMATED PARAMETERIZED MACROMODELING OF ELECTROMAGNETIC STRUCTURES***E. Fevola, A. Zanco, S. Grivet-Talocia, T. Bradde, M. De Stefano, Politecnico di Torino, Italy;***17:20-17:40****MACHINE LEARNING FOR THE DESIGN OF A DISTRIBUTION NETWORK FOR HIGH-SPEED SIGNALS***R. Trincherio, F.G. Canavero, Politecnico di Torino, Italy;***17:40-18:00****EVALUATION OF ANGULAR MOMENTUM AND ANGULAR POWER FLUX DENSITY IN COMPLEX ELECTROMAGNETIC ENVIRONMENTS***L.R. Arnaut, Queen Mary University London, United Kingdom; G. Gradoni, University of Nottingham, United Kingdom;***18:00-18:20****EFFICIENT SIMULATIONS OF FIELD-TO-PCBS COUPLING UNDER RANDOM EXCITATION***L. Bastianelli, F. Moglie, Università Politecnica delle Marche, Italy; G. Gradoni, University of Nottingham, United Kingdom; V. Mariani Primiani, Università Politecnica delle Marche, Italy;*

THURSDAY SEPTEMBER 12 - 08:20

ROOM ANDALUCIA 2 **SESSION 50 - ICEAA****ELECTROMAGNETIC MODELING OF DEVICES AND CIRCUITS**

Chair 1 M.M. Botha - Chair 2 T. Vaupel

08:20-08:40**FAST-CONVERGING, STABLE NETWORK MODEL FOR INTERCONNECTION STRUCTURES FACILITATING ARBITRARY MOM FORMULATIONS***C. Bednarz, M. Leone, Otto von Guericke University Magdeburg, Germany;***08:40-09:00****BROADBAND CIRCUIT MODEL FOR COUPLING BETWEEN TRANSMISSION LINES AND CURRENT PROBES IN METALLIC ENCLOSURES OF ARBITRARY SHAPE***C. Lange, M. Leone, Otto-von-Guericke University Magdeburg, Germany;***09:00-09:20****A MFIE/EFIE FAST MULTIPOLE VOLUME/SURFACE INTEGRAL EQUATION APPROACH FOR SUBSTRATE INTEGRATED WAVEGUIDE STRUCTURES AND LEAKY-WAVE/SLOT ANTENNAS USING THE DUALITY PRINCIPLE***T. Vaupel, Fraunhofer FHR, Germany;***09:20-09:40****PERFORMANCE OF MLCA WITH MODIFIED GROUPING FOR SUPERCONDUCTING CIRCUIT ANALYSIS***B.A.P. Nel, M.M. Botha, Stellenbosch University, South Africa;***09:40-10:00****COMPARISON OF DIFFERENT APPROACHES IN REFLECTARRAY SYNTHESIS BASED ON INTERSECTION APPROACH***D.R. Prado, Heriot-Watt University, United Kingdom; J. López-Fernández, M. Arrebola, M.R. Pino, Universidad de Oviedo, Spain; G. Goussetis, Heriot-Watt University, United Kingdom;***10:00-10:20****ON THE TECHNIQUES TO DESIGN 3D-PRINTABLE ARBITRARILY HEIGHT-MODULATED SUBSTRATE INTEGRATED WAVEGUIDE FILTERS***L. Alonso-Gonzalez, S. Ver-Hoeve, M. Fernandez-Garcia, C. Vazquez-Antuña, F. Las-Heras, University of Oviedo, Spain;***10:40-11:00****METHOD FOR CROSS COUPLINGS REALIZATION IN COMB-LINE FILTERS***A. Abramowicz, Warsaw University of Technology, Poland;***11:00-11:20****EMPIRICAL INVESTIGATION OF BENEFITS OF INCREASED NEURAL NETWORK DEPTH FOR MODELING OF ANTENNA INPUT CHARACTERISTICS***J.A. Baker, J.P. Jacobs, University of Pretoria, South Africa;***11:20-11:40****RADIATION PATTERN DESIGN BY USING 3D PRINTED BRAGG STRUCTURES***J.A.P. Ribeiro, E. Gonçalves, J.A.J. Ribeiro, F. Beltran-Mejia, National Institute of Telecommunications-Inatel, Brazil;***11:40-12:00****UWB STRIPLINE COUPLER WITH LOW LOSS AND RIPPLE***A. Agharasuli, M.K. Mehr, Iran Science and Technology University, Iran; O. Manoochehri, D. Erricolo, University of Illinois at Chicago, IL, United States;*


THURSDAY SEPTEMBER 12 - 12:00

ROOM ANDALUCIA 2 **SESSION 51 - ICEAA****RECENT ADVANCES IN ELECTROMAGNETICS FOR MRI**

Organized by D. Erricolo, G. Carluccio, R. Lattanzi

Chair 1 D. Erricolo - Chair 2 G. Carluccio, R. Lattanzi

12:00-12:20**ENHANCEMENT OF TRANSMIT AND RECEIVE EFFICIENCIES WITH HYBRIDIZED META-ATOM IN 7T HEAD COIL ARRAY***M. Dubois, Institut Fresnel, France; L. Leroi, A. Vignaud, CEA-DRF-JOLIOT-NeuroSpin, France; S. Enoc, R. Abdeddaim, Aix Marseille Univ-CNRS-Centrale Marseille-Institut Fresnel, France;*

- 12:20-12:40**
UNCERTAINTY PROPAGATION IN PHASELESS ELECTRIC PROPERTIES TOMOGRAPHY
A. Arduino, O. Bottauscio, M. Chiampì, L. Zilberti, Istituto Nazionale di Ricerca Metrologica (INRiM), Italy;
- 14:00-14:20**
ULTRA-FLEXIBLE 3T HIC RECEIVE ARRAY FOR CAROTID IMAGING
B. Zhang, M.A. Cloos, J. Yang, New York University School of Medicine, NY, United States; T.D. Nguyen, Weil Cornell Medicine, NY, United States; R. Brown, New York University School of Medicine, NY, United States;
- 14:20-14:40**
NUMERICAL AND EXPERIMENTAL EVALUATION OF SHORTFOLDED RECEIVE-ONLY DIPOLES FOR 9.4T HUMAN HEAD ARRAYS
G. Solomakha, S. Glybovski, I. Melchakova, ITMO University, Russia; A. Henning, K. Scheffler, N. Avdievich, Max Planck Institute for Biological Cybernetics, Germany
- 14:40-15:00**
TUNABLE ALL-DIELECTRIC RF-COILS FOR MAGNETIC RESONANCE MICROSCOPY
S. Kurdjumov, ITMO University, Russia; M. Moussu, Institut Fresnel, France; L. Ciobanu, DRF/12BM/Neurospin/UNIRS, France; E. Nenasheva, Ceramics Co.Ltd, Russia; B. Djemai, DRF/12BM/Neurospin/UNIRS, France; M. Dubois, Institut Fresnel, France; A. Webb, Leiden University Medical Center, Netherlands; S. Enoch, Institut Fresnel, France; P. Below, ITMO University, Russia; R. Abdeddaim, Institut Fresnel, France; S. Glybovski, ITMO University, Russia;
- 15:00-15:20**
EFFECTS OF MAGNETIC FIELDS GENERATED BY DIFFERENT PERMANENT MAGNET ARRAYS ON IMAGE RECONSTRUCTION IN A LOW-FIELD PORTABLE MRI SYSTEM
J. Gong, Z. Hua Ren, SUTD, Singapore; W. Yu, Chiba University, Japan; S. Ying Huang, Singapore University of Technology and Design, Singapore;
- 15:20-15:40**
REALISTIC SIMULATION OF PARALLEL TRANSMISSION IN MRI
T. Stoecker, DZNE, Germany;
- 15:40-16:00**
AN ARTIFICIAL MAGNETIC SHIELD FOR A VOLUME COIL FOR 7T MRI
A. Hurshkainen, K. Lezhennikova, ITMO University, Russia; C. Simovski, Aalto University, Finland; S. Glybovski, ITMO University, Russia;
- 16:20-16:40**
DESIGN AND CHARACTERIZATION OF PASSIVELY-FED DIPOLE ARRAYS WITH IMPROVED SPECIFIC ABSORPTION RATE EFFICIENCY AND REDUCED LOADING EFFECT FOR ULTRA-HIGH FIELD MRI
I. Zivkovic, A. Webb, Leiden University Medical Center, Netherlands;
- 16:40-17:00**
ELECTRICAL PROPERTIES MAPPING VIA SEGMENTED AND PHASELESS CONTRAST SOURCE INVERSION
M.T. Bevacqua, Università Mediterranea di Reggio Calabria, Italy; G.G. Bellizzi, Erasmus MC, Netherlands; L. Crocco, CNR-IREA Italy; T. Isernia, Università Mediterranea di Reggio Calabria, Italy;
- 17:00-17:20**
EVALUATION OF A 16-CHANNEL TRANSMITTER FOR HEAD IMAGING AT 10.5T
G. Adriani, J. Radder, N. Tavaf, R. Lagore, S. Jungst, M. Kyun Woo, A. Grant, Y. Eryaman, University of Minnesota, MN, United States; B. Zhang, New York University, NY, United States; S. Gundamony, University of Glasgow, United Kingdom; R. Lattanzi, Langone Medical Center, NY, United States; K. Ugurbil, P.-F. van de Moortele, University of Minnesota, MN, United States;
- 17:20-17:40**
UNIVERSAL PULSES FOR MRI AT 9.4 TESLA-A FEASIBILITY STUDY
C. Wiggins, Scannexus BV, Netherlands; B. Poser, Maastricht University, Netherlands; F. Mauconduit, N. Boulant, CEA/DRF/Joliot/NeuroSpin/Unirs, France; V. Gras, Joliot/NeuroSpin/Unirs, France;
- 17:40-18:00**
MODELLING AND B1 SHIM ANALYSIS OF 16-ELEMENT TRANSCIEVER ARRAY AT 7 T
X. Li, H. Gong, Purdue University, IN, United States; J.W. Pan, H.P. Hetherington, University of Pittsburgh, PA, United States; J.V. Rispoli, Purdue University, IN, United States;
- THURSDAY SEPTEMBER 12 - 08:20 **ROOM ANDALUCIA 1** 
- SESSION 52 - IEEE APWC**
- WIRELESS COMMUNICATIONS AND APPLICATIONS**
 Chair 1 L. Arjona - Chair 2 S. Saab
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- 08:20-08:40**
N-DIMENSIONAL M-ARY CONSTANT ENERGY MODULATION FOR NONLINEAR COMMUNICATIONS CHANNELS
R.A. Romero, Y. Heng, T.T. Ha, Naval Postgraduate School, United States;
- 08:40-09:00**
A BEAM-SLANT MONOPOLE YAGI-UDA ANTENNA WITH THE NOVEL FAN-SHAPED REFLECTOR
S. Wang, H. Li, X. Wang, F. Zhao, M. Cao, H. Li, Beijing Institute of Space Long March Vehicle, China;
- 09:00-09:20**
INTERFERENCE SIMULATIONS BETWEEN 5G AND GSO-NGSO NETWORKS AT 27-30 GHZ RANGE
C.V. Rodríguez R., M.P.C. Almeida, C.E. Orihuela Vargas, A.R. Tamo C., L.S. Mello, Pontifical Catholic University of Rio de Janeiro, Brazil;
- 09:20-09:40**
A NOVEL HIGH-TEMPERATURE STABLE ANTENNA WITH OMNIDIRECTIONAL RADIATION PATTERN
Y. Zhou, G. Zhang, X. Wang, H. Li, M. Cao, Beijing Institute of Long March Space Vehicle, China;
- 09:40-10:00**
HIGH PERFORMANCE FLEXIBLE PROTOCOL FOR BACKSCATTER-BASED NEURAL IMPLANTS
L. Arjona, J. Rosenthal, J.R. Smith, C.T. Moritz, University of Washington, WA, United States;
- 10:00-10:20**
IMPROVED EXTENDED MIN-SUM ALGORITHM FOR NON-BINARY LDPC CODES BASED ON NODE RELIABILITY
Y. Li, S. Zhang, F. Ye, Y. Zhou, Y. Tian, T. Jiang, Harbin Engineering University, China;
- 10:40-11:00**
ACTIVE MULTI-PORT SUBARRAYS FOR 5G COMMUNICATIONS
Y. Aslan, J. Puskely, A. Roederer, A. Yarovoy, Delft University of Technology, Netherlands;
- 11:00-11:20**
ANALYSIS OF INFLUENCE OF CHANNEL DAMAGE ON PHASED ARRAY COMMUNICATION LINKS
Y. Zhang, W. Huang, P. Li, J. Su, R. Zhang, Northwest Institute of Nuclear Technology, China;
- 11:20-11:40**
CAPACITY BASED OPTIMIZATION OF COMPACT WIDEBAND ANTENNAS
S. Saab, A. Mezghani, R.W. Heath Jr., University of Texas at Austin, TX, United States;
- 11:40-12:00**
COST-EFFECTIVE TESTBED FOR COGNITIVE LONG-RANGE COMMUNICATIONS BASED ON ANTENNA ARRAY AND SOFTWARE DEFINED RADIO
M. El-Hadidy, FOM University of Applied Science, Germany, Md Nahidul Islam, Vertex Antennentechnik GmbH, Germany; M. El-Sharkawy, Shams Systems & Technology-MEA, Egypt;
- 12:00-12:20**
OFDM CHANNEL SOUNDING IN LINE-OF-SIGHT V2V APPLICATIONS
M. Milla, ISL, France; H. Boeglen, University of Poitiers, France; L. Bernard, D. Schmoltzi, ISL, France; R. Vauzelle, University of Poitiers, France;

12:20-12:40**THE DISTRIBUTED RESOURCE ALLOCATION FOR D2D COMMUNICATION WITH GAME THEORY***H. Dun, F. Ye, S. Jiao, Y. Li, T. Jiang, Harbin Engineering University, China;***14:00-14:20****DUAL TARGET BODY MODEL FOR DEVICE-FREE LOCALIZATION APPLICATIONS***V. Rampa, S. Savazzi, IEIIT-CNR, Italy; M. D'Amico, G.G. Gentili, Politecnico di Milano, Italy;***14:20-14:40****PHYSICAL MODEL-BASED CALIBRATION FOR DEVICE-FREE RADIO LOCALIZATION AND MOTION TRACKING***V. Rampa, S. Savazzi, S. Kianoush, IEIIT-CNR, Italy;***14:40-15:00****COMPARATIVE PERFORMANCE ANALYSIS OF TRAINING SEQUENCES IN EQUALIZATION***B. Ramos, N. Tovar, V. Ojeda, M. Freire, E. Rosario, ESPOL, Ecuador;*

THURSDAY SEPTEMBER 12 - 15:00

ROOM ANDALUCIA 1 **SESSION 53 - ICEAA****ANTENNA ARRAY MODELLING****Organized by M.M. Botha, C. Craeye**

Chair 1 M.M. Botha - Chair 2 C. Craeye

15:00-15:20**ON THE Q-FACTOR OF PERIODIC ANTENNA ARRAYS OVER GROUND PLANE***A. Ludvig-Osipov, B.L.G. Jonsson, KTH Royal Institute of Technology, Sweden;***15:20-15:40****A QUASI-HELMHOLTZ PROJECTOR STABILIZED FULL WAVE SOLVER ENCOMPASSING THE EDDY CURRENT REGIME***T.L. Chhim, J.E. Ortiz, L. Rahmouni, A. Merlini, F.P. Andriulli, Politecnico di Torino, Italy***15:40-16:00****ON THE USE OF CONVEX OPTIMIZATION FOR ARRAY SYNTHESIS PROBLEMS***B. Fuchs, IETR-University of Rennes 1-CNRS, France;***16:20-16:40****FAST POWER-PATTERN SYNTHESIS OF 2D, PLANAR, APERIODIC ARRAYS***A. Capozzoli, C. Curcio, A. Liseno, Università di Napoli Federico II, Italy;***16:40-17:00****DETECTING FAILED ELEMENTS IN AN ARBITRARY ANTENNA ARRAY USING MACHINE LEARNING***L. de Lange, D.J. Ludick, T.L. Grobler, Stellenbosch University, South Africa;***17:00-17:20****EFFICIENT MODELING OF MODULATED METASURFACE ANTENNAS***D. González Ovejero, J. Ruiz-García, M. Faenzi, Univ Rennes, CNRS, IETR, France; S. Maci, University of Siena, Italy;***17:20-17:40****COMPUTATION OF MBF REACTION MATRICES FOR ANTENNA ARRAY ANALYSIS, WITH A DIRECTIONAL METHOD***K. Sewraj, M.M. Botha, Stellenbosch University, South Africa;***17:40-18:00****IMPROVEMENTS TO THE DOMAIN GREEN'S FUNCTION METHOD FOR ANTENNA ARRAY ANALYSIS***M. Chose, M.M. Botha, University of Stellenbosch, South Africa;***18:00-18:20****EFFECT OF FINITE GROUND PLANE ON IRREGULAR ARRAYS WITH METALLIC ELEMENTS***T. Pairon, J. Cavillot, S. Karki, C. Craeye, UCLouvain, Belgium;*

THURSDAY SEPTEMBER 12 - 08:40

ROOM SEMINARS 3-4-5 **SESSION 54 - ICEAA****COMPLEX ELECTROMAGNETICS SYTEMS: MODELING, MEASUREMENTS AND STANDARDS****Organized by V. Monebhurrn, A. Monorchio, R. Waterhouse**

Chair 1 V. Monebhurrn - Chair 2 A. Monorchio, R. Waterhouse

08:40-09:00**5G, A MULTIPHYSICS SIMULATION VISION FROM ANTENNA ELEMENT DESIGN TO SYSTEMS LINK ANALYSIS***C. Blair, ANSYS, United States; S. Lopez Ruiz, M. Morales, ANSYS, Spain;***09:00-09:20****RCS CALCULATION AND VALIDATION THROUGH MEASUREMENTS OF ELECTRICALLY LARGE OBJECTS PARTIALLY COVERED WITH THIN RADAR ABSORBING METAMATERIALS***P. Usai, Free Space srl, Italy; F. Costa, A. Monorchio, University of Pisa / CNIT, Italy;***09:20-09:40****ACCURACY OF THIN-WIRE MOM FORMULATIONS FOR PHASED ARRAY ANALYSIS FOR SKA-LOW***D.B. Davidson, ICRAR/Curtin, Australia;***09:40-10:00****ACCURATE MODELING OF INTEGRATED ANTENNA/PHOTONIC MODULES***R.B. Waterhouse, D. Novak, Pharad, United States;***10:00-10:20****UPDATE ON DEVELOPMENTS REGARDING A HIGHER ORDER FINITE ELEMENT METHOD ELECTROMAGNETIC SIMULATOR (HOFEM)***L.E. García-Castillo, A. Amor-Martin, D. García-Donoro, University Carlos III of Madrid, Spain;***10:40-11:00****QUASI-ANALYTICAL WIENER-HOPF SOLUTIONS OF ELECTROMAGNETIC PROBLEMS TO BENCHMARK FULL NUMERICAL COMPUTATIONAL ELECTROMAGNETICS PROGRAMS***V. Daniele, G. Lombardi, R.S. Zich, Politecnico di Torino-LINKS, Italy;***11:00-11:20****ON HIGHER ORDER IMPERATIVE IN COMPUTATIONAL ELECTROMAGNETICS***V. Okhmatovski, University of Manitoba, Canada;***11:20-11:40****5G RBS AND UE MODELLING FOR ASSESSMENT OF RF EMF EXPOSURE***A.P. Piroddi, University of The People, USA; M.T. Torregiani, Italy;***11:40-12:00****AN OVERVIEW OF THE EDA-WORKSHOP 'RADAR SIGNATURES & EM BENCHMARKS'***F. Weinmann, Fraunhofer FHR, Germany; R. Krebs, European Defence Agency, Belgium;***12:00-12:20****SIMULATION AND VALIDATION OF A COMPUTER-AIDED DESIGN MOBILE PHONE MODEL***V. Monebhurrn, Centralesupelec, France;***12:20-12:40****COMBINING NEAR-FIELD MEASUREMENTS AND NUMERICAL SIMULATIONS IN THE COMPLETE CHARACTERIZATION OF COMPLEX ELECTROMAGNETIC SYSTEMS***L. J. Foged, M. Saporetti, F. Saccardi, L. Scialacqua, mvg, Italy;*

THURSDAY SEPTEMBER 12 - 14:00

ROOM SEMINARS 3-4-5 **SESSION 55 - ICEAA****FAST COMPUTATIONAL METHODS**

Organized by A. Boag

Chair 1 A. Boag

14:00-14:20**DIRECT SOLVER FOR QUASI-PLANAR EM SCATTERING PROBLEMS***E.V. Chernokozhin, A. Boag, Tel Aviv University, Israel;***14:20-14:40****SOLVING ELECTROMAGNETIC SCATTERING FROM CONDUCTING OBJECTS WITH NOVEL SKELETONIZATION BASED FAST DIRECT SOLVER***Z. Rong, M. Jiang, Y. Chen, X. Li, J. Hu, University of Electronic Science and Technology of China, China;***14:40-15:00****TOWARD MORE GEOMETRICALLY ADAPTIVE COMPRESSION OF MOMENT MATRICES***Y. Brick, Ben-Gurion University of the Negev, Israel;***15:00-15:20****APPLICATION OF THE CHARACTERISTIC BASIS FUNCTION METHOD USING GEOMETRICALLY OPTIMIZED FUNCTION SETS***C. Delgado, E. Garcia, Universidad de Alcalá, Spain; A. Somolinos, Newfasant, S. L., Spain; F. Catedra, Universidad de Alcalá, Spain;***15:20-15:40****ACCURACY STUDY AND VALIDATION TECHNIQUES FOR FAST BEAM-BASED MONOSTATIC SCATTERING COMPUTATIONS***C. Letrou, M. Hariz, Télécom SudParis, France; A. Boag, Tel Aviv University, Israel;***15:40-16:00****STUDY ON FAST ALGORITHMS IN MULTIPHYSICS THORAX IMAGING***M. Li, K. Zhang, X. Song, H. Zhang, R. Guo, F. Yang, S. Xu, Tsinghua University, China; A. Abubakar, Schlumberger, China;***16:20-16:40****RECONSTRUCTION OF THE CONDUCTIVITY PROFILE OF THE HUMAN HEAD BY A NON-INVASIVE METHOD***Z. Ibragimov, R. Shavit, Ben-Gurion University of the Negev, Israel;***16:40-17:00****ELECTROMAGNETIC ANALYSIS AND DESIGN OF RADIATING SYSTEMS ON BOARD REAL PLATFORMS VIA DOMAIN DECOMPOSITION METHOD***D. Larios, University of Extremadura, Spain; M.G. Araujo, University of Vigo, Spain; D.M. Solis, University of Pennsylvania, PA, USA; V.F. Martin, J.M. Taboada, University of Extremadura, Spain; F. Obelleiro, University of Vigo, Spain***17:00-17:20****TENSOR TRAIN ACCELERATION OF METHOD OF MOMENTS SOLUTION OF VOLUME INTEGRAL EQUATION ON STRUCTURED AND UNSTRUCTURED MESHES***Z. Chen, University of California at Santa Barbara, CA, United States; S. Zheng, V. Okhmatovski, University of Manitoba, Canada;***17:20-17:40****ON PRECONDITIONING ELECTROMAGNETIC INTEGRAL EQUATIONS IN THE HIGH FREQUENCY REGIME VIA HELMHOLTZ OPERATORS AND QUASI-HELMHOLTZ PROJECTORS***A. Dely, A. Merlini, Politecnico di Torino, Italy; S.B. Adrian, Technical University of Munich, Germany; F.P. Andriulli, Politecnico di Torino, Italy;*

THURSDAY SEPTEMBER 12 - 08:20

ROOM SEMINARS 6-7 **SESSION 56 - IEEE APWC****THE FUTURE OF IOT TECHNOLOGIES AND SOLUTIONS**

Organized by P.M. Duarte Cruz, R. Caldeirinha

Chair 1 P.M. Duarte Cruz - Chair 2 R. Caldeirinha

08:20-08:40**INDOOR BODY-TO-BODY LORA LINK CHARACTERIZATION***T. Ameloot, P. Van Torre, H. Rogier, Ghent University, Belgium;***08:40-09:00****ENERGY RESOURCES MANAGEMENT ENABLED BY INTERNET OF THINGS DEVICES***L. Gomes, P. Faria, F. Silva, Z. Vale, Polytechnic of Porto, Portugal;***09:00-09:20****GRAPH BASED INTERFERENCE ANALYSIS AND RESOURCE ALLOCATION IN MMWAVE IOT NETWORKS***H.L. Vulchi, R.P. Leal, A.G. Armada, Universidad Carlos III de Madrid, Spain;***09:20-09:40****MULTI-PROTOCOL LORAWAN/WI-FI SENSOR NODE PERFORMANCE ASSESSMENT FOR INDUSTRY 4.0 ENERGY MONITORING***P. Ferreira, FEUP, Portugal; R.N. Miranda, P.M. Cruz, Controlar SA, Portugal; H.S. Mendonça, FEUP, Portugal;*

THURSDAY SEPTEMBER 12 - 09:40

ROOM SEMINARS 6-7 **SESSION 57 - ICEAA****MICROWAVE IMAGING AND APPLICATIONS**

organized by M. Pastorino

Chair 1 M. Pastorino - Chair 2 T. Kallos

09:40-10:00**ON SPECTRAL CONTENT OF RADIATING COMPONENTS OF ELECTROMAGNETIC SOURCES***M.T. Bevacqua, T. Isernia, Università Mediterranea di Reggio Calabria, Italy;***10:00-10:20****METAMATERIAL DESIGNS TO ENHANCE MICROWAVE IMAGING APPLICATIONS***E. Razzicchia, M. Koutsoupidou, King's College London, UK; H. Cano-Garcia, Medical Wireless Sensing Ltd, UK; I. Sotiriou, King's College London, UK; E. Kallos, G. Palikaras, Medical Wireless Sensing Ltd, UK; P. Kosmas, King's College London, UK;***10:40-11:00****NUFFT-BASED RANGE MIGRATION FOR 3-D IMAGING WITH IRREGULAR PLANAR ARRAY***J. Wang, A. Yarovoy, Delft University of Technology, Netherlands;***11:00-11:20****COMPARISON OF SOME GEOMETRIES IN THE INVERSE SOURCE PROBLEM***G. Leone, F. Munno, R. Pierri, Università della Campania L. Vanvitelli, Italy;***11:20-11:40****JUSTIFICATION OF MATHEMATICAL IMAGING TECHNIQUE FOR THE PERMITTIVITY DETERMINATION OF LAYERED DIELECTRICS IN A WAVEGUIDE***Y. Shestopalov, University of Gävle, Sweden;*

11:40-12:00**RESOLUTION ENHANCEMENT WITH UWB ANTENNAS FOR MICROWAVE IMAGING WITH RAR ALGORITHM***A. De Sousa, S. Poretti, M. Maffongelli, A. Salvade, SUPSI-TTHF, Switzerland;***12:00-12:20****HALF-SPACE IMPACT IN MULTI-MONOSTATIC LINEAR INVERSE SCATTERING: NUMERICAL RESULTS***R. Solimene, M.A. Maisto, R. Pierrì, Università della Campania Luigi Vanvitelli, Italy;*

THURSDAY SEPTEMBER 12 - 14:00

ROOM SEMINARS 6-7 **SESSION 58 - ICEAA****EBG-INSPIRED ANTENNAS AND MICROWAVE STRUCTURES****Organized by K. Esselle, L. Matekovits**

Chair 1 K. Esselle - Chair 2 L. Matekovits

14:00-14:20**ANTENNA BEAM STEERING BY NEAR-FIELD PHASE TRANSFORMATION: COMPARISON BETWEEN PHASE TRANSFORMING PRINTED METASURFACES AND GRADED-DIELECTRIC PLATES***M.U. Afzal, A. Lalbakhsh, N.Y. Koli, K.P. Esselle, Macquarie University, Australia;***14:20-14:40****OVERVIEW OF WIDEBAND FABRY-PÉROT CAVITY ANTENNAS WITH THICK PARTIALLY REFLECTIVE SURFACE***A. Almutawa, F. Capolino, University of California at Irvine, CA, United States; D. Jackson, University of Houston, TX, United States;***14:40-15:00****INVESTIGATING SMALL APERTURE RADIAL LINE SLOT ARRAY ANTENNAS FOR MEDIUM GAIN COMMUNICATION LINKS***M. Nishat Yasmin Koli, M. Usman Afzal, K.P. Esselle, Macquarie University, Australia; L. Matekovits, Polytechnic University of Turin, Italy; Md Zahidul Islam, Teleaus:Information and Communications Engineering Company, Australia;***15:00-15:20****PROPERTIES OF GLIDE SYMMETRIC STRUCTURES: A MULTIMODAL APPROACH***M. Bagheriasl, G. Valerio, Sorbonne Université, France;***15:20-15:40****REACTIVELY-LOADED EBG TRANSMISSION LINES WITH PERIODICITY TRUNCATION FOR IMPROVEMENT OF THE STOP BAND PERFORMANCE***J. Coromina, P. Vélez, J. Bonache, Universitat Autònoma de Barcelona, Spain; F. Aznar-Ballesta, Universidad Politécnica de Madrid, Spain; F. Martin, Universitat Autònoma de Barcelona, Spain;***15:40-16:00****ANALYSIS OF THE SURFACE IMPEDANCE OF A SINUSOIDALLY MODULATED METASURFACE***B. Cappello, Politecnico di Torino, Italy; Y. Shestopalov, University of Gavle, Sweden; L. Matekovits, Politecnico di Torino, Italy;***16:20-16:40****RECENT ADVANCES ON DIELECTRIC EBGs FOR DIRECTIVE ANTENNAS***S. Ceccuzzi, P. Baccarelli, C. Ponti, G. Schettini, Roma Tre University, Italy;***16:40-17:00****ON THE DESIGN OF BROADBAND RESONANT CAVITY ANTENNAS WITH FEEDS SUITABLE FOR INTEGRATION WITH MILLIMETER-WAVE TRANSCIEVER CHIPS***R.M Hashmi, A. A Baba, K.P. Esselle, Macquarie University, Australia; J.A. Gonzalez Marin, J. Hesselbarth, University of Stuttgart, Germany;***17:00-17:20****APPLICATION OF A NEAR FIELD METHOD TO REDUCING CONDUCTED EMISSIONS***A.-M. Silaghi, A. De Sabata, L. Matekovits, Politecnico di Torino, Italy;***17:20-17:40****CONTACTLESS PHOTO-CONDUCTIVITY MEASUREMENTS USING TIME-RESOLVED MICROWAVE CONDUCTIVITY***R.M. Hashmi, S. Pillai, Macquarie University, Australia;*

FRIDAY SEPTEMBER 13 - 08:20

ROOM FALLA **SESSION 59 - ICEAA****ELECTROMAGNETIC MEASUREMENTS**

Chair 1 D. Guerra Pereda - Chair 2 M. Vakhitov

08:20-08:40**NOVEL POST-PROCESSING TECHNIQUE IN FREE SPACE TRANSMISSION LOSS MEASUREMENT OF MULTI-LAYER DIELECTRIC MATERIAL PARAMETERS***A.Y. Solovey, L3 ESSCO, United States;***08:40-09:00****MEASURING PERMITTIVITY AND PERMEABILITY FOR A POWDERED MATERIAL***D. Klygach, M. Vakhitov, Ural Federal University, Russia; A. Khashimov, South Ural State University, Russia; K. Yusupov, Kazan Federal University, Russia;***09:00-09:20****TRANSMISSION/REFLECTION SYSTEM FOR DIELECTRIC CHARACTERIZATION USING COAXIAL PROBES***P. Santon, J.V. Balbastre, E. De los Reyes, Universitat Politècnica de València, Spain; R. De los Reyes, Microbiotech S.L., Spain; M. Baquero, Universitat Politècnica de València, Spain;***09:20-09:40****THZ DETECTOR CALIBRATION BASED ON MICROWAVE POWER STANDARDS***A. Kazemipour, J. Hoffmann, D. Stalder, M. Wollensack, J. Rufenacht, M. Zeier, METAS, Switzerland;***09:40-10:00****COMPLEX PERMITTIVITY MEASUREMENTS OF HYDRAULIC OIL AT UHF AND MICROWAVE FREQUENCIES***S. Lenzi, L. Rosa, L. Vincetti, University of Modena and Reggio Emilia, Italy;***10:00-10:20****DISCUSSION ON THE CHOICE OF THE APPROPRIATE ANTENNA FOR AMBIENT RF POWER DENSITY MEASURING SYSTEMS***S. Aghabeiki, M.A. Constant Niamien, M. Kadi, Esigelec-Irseem, France; M. Fall, greensystech, France;***10:40-11:00****DESIGN METHODOLOGY OF QUASI-ISOTROPIC ANTENNAS WITH BASIC RADIATORS AS THE ELECTRIC AND MAGNETIC DIPOLES***S. Aghabeiki, M.A. Constant Niamien, M. Kadi, Esigelec-Irseem, France; M. Fall, greensystech, France;***11:00-11:20****IMPROVED PERMITTIVITY AND PERMEABILITY MEASUREMENT IN OPEN OR SHORT CIRCUIT TERMINATED TEST FIXTURES***S.R. Pennock, University of Bath, United Kingdom;***11:20-11:40****TIME VARIABILITY OF ELECTROMAGNETIC EXPOSURE DUE TO WI FI NETWORKS***D. Guerra Pereda, M. Fernandez Andres, I. Pena Valverde, U. Gil Abaunza, A. Arrinda Sanzberro, University of the Basque Country (UPV/EHU), Spain;*

11:40-12:00

CHARACTERIZATION METHODOLOGY UP TO 40 GHZ OF NEW LOW LOSS SOFT DIELECTRIC THERMOPLASTIC FILM FOR MICROWAVE APPLICATIONS*T. Sghaier, M. EL Gibari, B. Guiffard, University of Nantes, France;*

12:00-12:20

REGRESSION TECHNIQUE FOR ELECTROMAGNETIC FIELD SAMPLING AND RECONSTRUCTION*S. Rondineau, University of Brasilia, Brazil; B. Fuchs, University of Rennes 1, IETR, France; F. Batista Ribeiro Costa, University of Brasilia, Brazil; L. Le Coq, University of Rennes 1, IETR, France; E. Goncalves Sousa, University of Brasilia - UnB, Brazil; M. Donald Migliore, University of Cassino e Lazio Meridionale, Italy;*

FRIDAY SEPTEMBER 13 - 08:20

ROOM ANDALUCIA 3 **SESSION 60 - ICEAA****MULTIPHYSICS MODELING IN ELECTROMAGNETICS****Organized by J.-M. Jin, W.-Y. Yin, S. Yan**

Chair 1 J.- M. Jin - Chair 2 W.-Y. Yin

08:20-08:40

NONPERTURBATIVE AND UNIVERSAL NONLINEAR ELECTROMAGNETIC MODEL FOR PLASMONIC NANOSTRUCTURES*M. Fang, Z. Huang, H. Zhu, X. Wu, Anhui University, China;*

08:40-09:00

AN ADAPTIVE DISCONTINUOUS GALERKIN TIME-DOMAIN METHOD FOR MULTIPHYSICS AND MULTISCALE SIMULATIONS*S. Yan, Howard University, DC, United States; J. Qian, J. Jin, University of Illinois, IL, United States;*

09:00-09:20

STUDY ON A JOINT INVERSION ALGORITHM FOR ACOUSTIC AND ELECTROMAGNETIC DATA BASED ON CONTRAST SOURCE INVERSION METHOD AND CROSS-GRADIENT CONSTRAINT*X. Song, R. Guo, M. Li, F. Yang, S. Xu, Tsinghua University, China; A. Abubakar, Schlumberger, China;*

09:20-09:40

AN EDGE-BASED SMOOTHED FEM FOR MULTISCALE ELECTROSTATIC LENS MODELING*Y. Zhang, P. Wang, W. Li, S. Yang, Beihang University, China;*

09:40-10:00

ELECTROTHERMAL STUDY ON RESISTIVE RANDOM ACCESS MEMORY (RRAM) ARRAYS*W.-S. Zhao, Hanzhou Dianzi University, China; W. Chen, ZJU-UIUC Institute, China; W.-Y. Yin, Zhejiang University, China;*

10:00-10:20

AN ACCURATE AND STABLE FINITE ELEMENT METHOD FOR SELF-HEATING EFFECTS SIMULATION OF SEMICONDUCTOR DEVICES*D.-M. Yu, X.-M. Pan, X.Q. Sheng, Beijing Institute of Technology, China;*

10:40-11:00

MASSIVELY PARALLEL MULTIPHYSICS SOLVER FOR SIMULATING LARGE-SCALE ANTENNA ARRAY AND OTHER 3-D STRUCTURES*H.-X. Zhang, L. Huang, L. Zhou, Shanghai Jiao Tong University, China; Z..G. Zhao, Y.-T. Zheng, Institute of Applied Physics and Computational Mathematics, China; G.D Zhu, W.-Y. Yin, Zhejiang University, China;*

FRIDAY SEPTEMBER 13 - 11:00

ROOM ANDALUCIA 3 **SESSION 61 - IEEE APWC****WIRELESS POWER TRANSMISSION AND HARVESTING**

Chair 1 A. Niembro-Martin - Chair 2 S. Reza

11:00-11:20

IMPLEMENTATION OF A WIRELESS POWER TRANSFER SYSTEM FOR PROSTHETIC HANDS*S. Reza Khan, M.P.Y. Desmulliez, Heriot-Watt University, United Kingdom;*

11:20-11:40

CIRCULAR WAVEGUIDE ARRAY RECTENNA EQUIPPED WITH PUMP-CHARGE AND DC-DC CONVERTER CIRCUITS FOR 1.8GHZ RF ENERGY HARVESTING APPLICATION*A. Munir, M.P.K Praja, I.M.S. Arifianto, Institut Teknologi Bandung, Indonesia;*

11:40-12:00

A COMPARATIVE STUDY OF THE HARVESTED WIRELESS POWER USING MULTIPLE ANTENNA DESIGNS IMPLEMENTED IN A COMMON DOMESTIC ENVIRONMENT*A. Shastri, M. Sobhy, B. Sanz Izquierdo, University of Kent, United Kingdom;*

12:00-12:20

NEW ARCHITECTURE FOR WIRELESS 230V POWERED BASED ON ISOLATED MICROSTRIP LINE*A. Niembro-Martin, E. Dreina, Schneider Electric, France;*

12:20-12:40

EVALUATION METHOD OF RESONANT COIL TO OBTAIN DIAMETER-TO-DIAMETER TRANSMISSION DISTANCE OF RESONANT COIL*I.-K. Cho, S.-W. Kim, J.-I. Moon, S.-M. Kim, J.-Y. Kim, H.-J. Lee, ETRI, Korea, South;*

FRIDAY SEPTEMBER 13 - 08:20

ROOM ANDALUCIA 2 **SESSION 62 - IEEE APWC****INNOVATIVE ANTENNAS AND WIRELESS SYSTEMS FOR A SUSTAINABLE AND EFFICIENT INTERNET OF THINGS (IOT)****Organized by J.L. Gomez Tornero, G. Goussetis, A. Georgiadis**

Chair 1 J.L. Gomez Tornero - Chair 2 G. Goussetis

08:20-08:40

MICROWAVE ENCODERS AND APPLICATION TO NEAR-FIELD CHIPLESS-RFID: A REVIEW*C. Herrojo, F. Paredes, P. Vélez, F. Martín, Universitat Autònoma de Barcelona, Spain;*

08:40-09:00

LOW COST AMBIENT BACKSCATTER FOR AGRICULTURAL APPLICATIONS*S. Daskalakis, A. Georgiadis, G. Goussetis, Heriot-Watt University, United Kingdom; M. Tentzeris, Georgia Institute of Technology, GA, United States;*

09:00-09:20

EXPERIMENTAL STUDY OF A SELF-OSCILLATING ANTENNA AT 5.8 GHZ FOR BREATH MONITORING*G. Paolini, M. Feliciani, D. Masotti, A. Costanzo, University of Bologna, Italy;*

09:20-09:40

WIDEBAND CIRCULARLY POLARIZED 3D WIRE ANTENNA FOR WI-MAX APPLICATIONS*F. Benmahmoud, P. Lemaitre-Auger, S. Tedjini, Univ. Grenoble Alpes, France;*

09:40-10:00

A MOBILE TERMINAL LEAKY-WAVE ANTENNA FOR EFFICIENT 5G COMMUNICATION

Y. El-Gholb, *The University of Sidi Mohamed Ben Abdellah, Morocco*; M. Poveda-García, J.L. Gomez-Tornero, J.M. Molina-García-Pardo, *Technical University of Cartagena, Spain*; N. El-Amrani-El-Idrissi, *The University of Sidi Mohamed Ben Abdellah, Morocco*;

10:00-10:20

SPATIALLY-FED ARRAYS FOR NEAR-FIELD MULTIPLE-SPOT COVERAGE

A.F. Vaquero, M. Arrebola, M.R. Pino, *Universidad de Oviedo, Spain*;

10:40-11:00

ON THE PRACTICAL LIMITATIONS OF ELECTRONIC BEAMSTEERING USING METAMATERIALS AT 28 GHZ

M. Vala, R. Reis, R.F.S. Caldeirinha, *Instituto de Telecomunicações and Polytechnic Institute of Leiria, Portugal*

FRIDAY SEPTEMBER 13 - 11:00

ROOM ANDALUCIA 2 **SESSION 63 - ICEAA****HIGH POWER ELECTROMAGNETICS**

Chair 1 P. Santon - Chair 2 T. Takamatsu

11:00-11:20

BASIC STUDY OF 3-D NON-INVASIVE MEASUREMENT OF TEMPERATURE DISTRIBUTIONS FROM ULTRASOUND IMAGES DURING HIFU TREATMENTS

R. Sakakibara, K. Kato, P.K. Choi, *Meiji University, Japan*; A. Takeuchi, *Luke Hospital, Japan*;

11:20-11:40

DEVELOPMENT OF NON-CONTACT RECTANGULAR RESONANT CAVITY APPLICATOR WITH 2-D ULTRASOUND TEMPERATURE MEASUREMENT SYSTEM

T. Takamatsu, *Meiji University, Japan*; Y. Shindo, *Toyo University, Japan*; Y. Iseki, *Hachinohe National College of Technology, Japan*; K. Kato, *Meiji University, Japan*;

11:40-12:00

SPIRAL ASYMMETRIC STRIPLINE STRUCTURE FOR FAST MICROWAVE HEATING

P. Santon, J.V. Balbastre, E. De los Reyes, *Universitat Politècnica de València, Spain*; R. De los Reyes, *Microbiotech S.L., Spain*;

12:00-12:20

EXPERIMENTAL INVESTIGATION ON EFFECTIVENESS OF HIGH POWER EM WAVE USAGE FOR DECREASING HEAVY OIL VISCOSITY

G.S. Nirmala, A. Anugerah, S. Rahmat, T. Marhaendrajana, A. Munir, *Institut Teknologi Bandung, Indonesia*;

12:20-12:40

PREDICTIVE MODELING OF ERRONEOUS SOFTWARE BEHAVIOR IN EMBEDDED DIGITAL SYSTEMS DUE TO EXTREME ELECTROMAGNETIC INTERFERENCE

M. Vitkovsky, *University of New Mexico, NM, United States*; T.M. Antonsen, *University of Maryland, MD, United States*; E. Schamiloglu, S. Hemmady, *University of New Mexico, NM, United States*;

FRIDAY SEPTEMBER 13 -08:20

ROOM ANDALUCIA 1 **SESSION 64 - ICEAA****ADVANCED ARCHITECTURES SUPPORTING RADIATIONLESS ANAPOLE MODES IN ELECTRODYNAMICS AND NANOPHOTONICS**

Organized by A. Basharin, L. Matekovits

Chair 1 A. Basharin - Chair 2 L. Matekovits

08:20-08:40

ELECTRODYNAMICS BEYOND COMMON MULTIPOLES

V.A. Fedotov, *University of Southampton, United Kingdom*;

08:40-09:00

MAGNETIC HIGH-Q RESONANCE IN PLANAR TOROIDAL METAMATERIAL

M.V. Cojocari, V.I. Chuguevsky, N.A. Volsky, A. Basharin, *National University of Science and Technology 'MISIS'-STC UI RAS, Russia*;

09:00-09:20

ANAPOLE MODES IN DIELECTRIC METASURFACES

J.F. Algorri, *Carlos III University of Madrid, Spain*; D. Zografopoulos, A. Ferraro, R. Beccherelli, *Istituto per la Microelettronica e Microsistemi, Italy*; J.M. Sanchez-Pena, R. Vergaz, B. Garcia-Camara, *Carlos III University of Madrid, Spain*;

09:20-09:40

NOVEL ALL-DIELECTRIC NANOANTENNA FOR EFFICIENT REFLECTORS IRRADIATION

A. Ospanova, A. Bugakova, A. Basharin, *National University of Science and Technology (MISIS)-STC UI RAS, Russia*;

09:40-10:00

HOW TO SPLIT ELECTRIC AND TOROIDAL DIPOLE EXCITATIONS DUE TO SUPERCONDUCTIVITY?

A. Basharin, *NUST MISIS-STC UI RAS, Russia*;

10:00-10:20

ALL DIELECTRIC PERFORATED METAMATERIALS FOR OPTICS

A. Ospanova, I. Stenishchev, A. Basharin, *NUST MISIS-STC UI RAS, Russia*;

10:40-11:00

IDEAL MAGNETIC DIPOLE: SCATTERING AND MANTLE CLOAKING EFFECTS

B. Cappello, *Politecnico di Torino, Italy*; A. Ospanova, A. Basharin, *National University of Science and Technology (MISIS)-STC UI RAS, Russia*; L. Matekovits, *Politecnico di Torino, Italy*;

11:00-11:20

ANAPLES AND FLYING DOUGHNUTS

N. Papisimakis, V. Savinov, A. Zdagkas, N.I. Zheludev, *University of Southampton, United Kingdom*;

FRIDAY SEPTEMBER 13 - 11:20

ROOM ANDALUCIA 1 **SESSION 65 - IEEE APWC****COMMUNICATION SATELLITE ANTENNAS**

Chair 1 A. Basharin - Chair 2 L. Matekovits

11:20-11:40

SLM 3D-PRINTED HORN ANTENNA FOR SATELLITE COMMUNICATIONS AT X-BAND

J.M. Kotzé, J. Gilmore, *Stellenbosch University, South Africa*;

11:40-12:00

MINIATURIZED PIXEL ANTENNA FOR IMPLANTATION ON THE ARGOS CUBESAT 4U

M. Themalil, M. Majed, *University of Limoges, France*; M. Rammal, *ITHPP, France*; E. Martinod, B. Jecko, *University of Limoges, France*;

12:00-12:20**A COMPACT CIRCULARLY POLARIZED HIGH-GAIN ANTENNA ARRAY FOR KA-BAND CUBESATS APPLICATIONS**

D. Warmowska, Brno University of Technology, Czech Republic; K. Atia Abdalmalak, L.E. García Muñoz, Universidad Carlos III de Madrid, Spain; Z. Raida, Brno University of Technology, Czech Republic;

12:20-12:40**HELIX ANTENNA ARRAY BASED ON HIGHER SYMMETRIES FOR ANTENNA MINIATURIZATION AND MUTUAL COUPLING REDUCTION**

A. Palomares-Caballero, A. Alex-Amor, University of Malaga, Spain; J. Valenzuela-Valdés, P. Padilla, University of Granada, Spain;

FRIDAY SEPTEMBER 13 - 08:20

ROOM SEMINARS 3-4-5 **SESSION 66 - ICEAA****ANTENNAS-ICEAA**

Chair 1 P.M. Duarte Cruz - Chair 2 R. Caldeirinha

08:20-08:40**A FOUR CHANNEL LINEARLY POLARIZED HELICAL BEAM ANTENNA SYSTEM**

G. Junkin, J. Parrón-Granados, UAB, Spain;

08:40-09:00**AN ANTENNA DECOUPLING METHOD BY USING FREQUENCY SELECTIVE SURFACE**

Z. Dai, J. Su, Communication University of China, China;

09:00-09:20**AUTOMATED DESIGN OF MICROSTRIP PATCH ANTENNA USING ANT COLONY OPTIMIZATION**

L. Vu Tung, L. Ho Manh, Hanoi University of Science and Technology, Vietnam; C. Dao Ngoc, Ministry of Science and Technology, Vietnam; M. Beccaria, P. Pirinoli, Politecnico di Torino, Italy;

09:20-09:40**INPUT IMPEDANCE OF CONICAL MICROSTRIP ANTENNAS**

V. Sabino, Universidade Federal de Pernambuco, Brazil; D.B. Ferreira, Instituto Tecnológico de Aeronautica, Brazil; O.M.C. Pereira-Filho, Universidade Federal de Pernambuco, Brazil; L.C. da Silva, Pontificia Universidade Católica do Rio de Janeiro, Brazil

09:40-10:00**EVOLVED DESIGN OF MICROSTRIP PATCH ANTENNA BY GENETIC PROGRAMMING**

T. Bui Bach, L. Ho Manh, K. Nguyen Khac, Hanoi University of Science and Technology, Vietnam; M. Beccaria, A. Massaccesi, Politecnico di Torino, Italy; R. Zich, Politecnico di Milano, Italy;

10:00-10:20**A CIRCULARLY-POLARIZED BEAM-SHAPED ANTENNA**

W. Wang, Y. Han, Y.F. Zhou, H. Li, X. Wang, Beijing Institute of Space Long March Vehicle, China;

10:40-11:00**IMPROVING GAIN OF A BROADBAND ANTIPODAL VIVALDI ARRAY FED BY A TAPERED EXCITATION**

M.C. Gonzalez, University of California at Davis, CA, United States;

11:00-11:20**A NOVEL MULTI BAND PATCH ANTENNA BASED ON PLOTTING EXPONENTIAL PARTIAL SUMS IN THE COMPLEX PLANE**

L. Guerrero, T. Jara, J. Ordoñez, M. Cevallos, P. Chasi, Universidad Politécnica Salesiana, Ecuador;

11:20-11:40**HIGH GAIN BROADBAND VIVALDI ANTENNA FOR 5G APPLICATIONS**

K. Muzaffar, M. Idrees Magray, Islamic University of Science & Technology, India; G.S. Karthikeya, S.K. Koul, IIT Delhi, India;

FRIDAY SEPTEMBER 13 - 11:40

ROOM SEMINARS 3-4-5 **SESSION 67 - IEEE APWC****RADARS & PROPAGATION: TECHNOLOGIES, WAVEFORMS AND INTERFERENCE ISSUES**

Organized by P.M. Duarte Cruz, R. Caldeirinha

Chair 1 P.M. Duarte Cruz - Chair 2 R. Caldeirinha

11:40-12:00**AUTOMATIZED SOLUTION FOR OVER-THE-AIR (OTA) TESTING AND VALIDATION OF AUTOMOTIVE RADAR SENSORS**

C.J. Rocha, R. Ribeiro, P.M. Cruz, Controlar SA, Portugal; P. Viana, IPP-ISEP and INESC TEC, Portugal;

12:00-12:20**DISRUPTIVE FUTURE OF RADAR BASED ON ALL-DIGITAL PN SIGNAL PROCESSING**

R. Caldeirinha, J. Reis, A. Sardo, L. Duarte, N. Leonor, Instituto de Telecomunicações and Polytechnic of Leiria, Portugal; J. Gil, Tvevo, Lda, Portugal; C. Ribeiro, Polytechnic Institute of Leiria, Portugal;

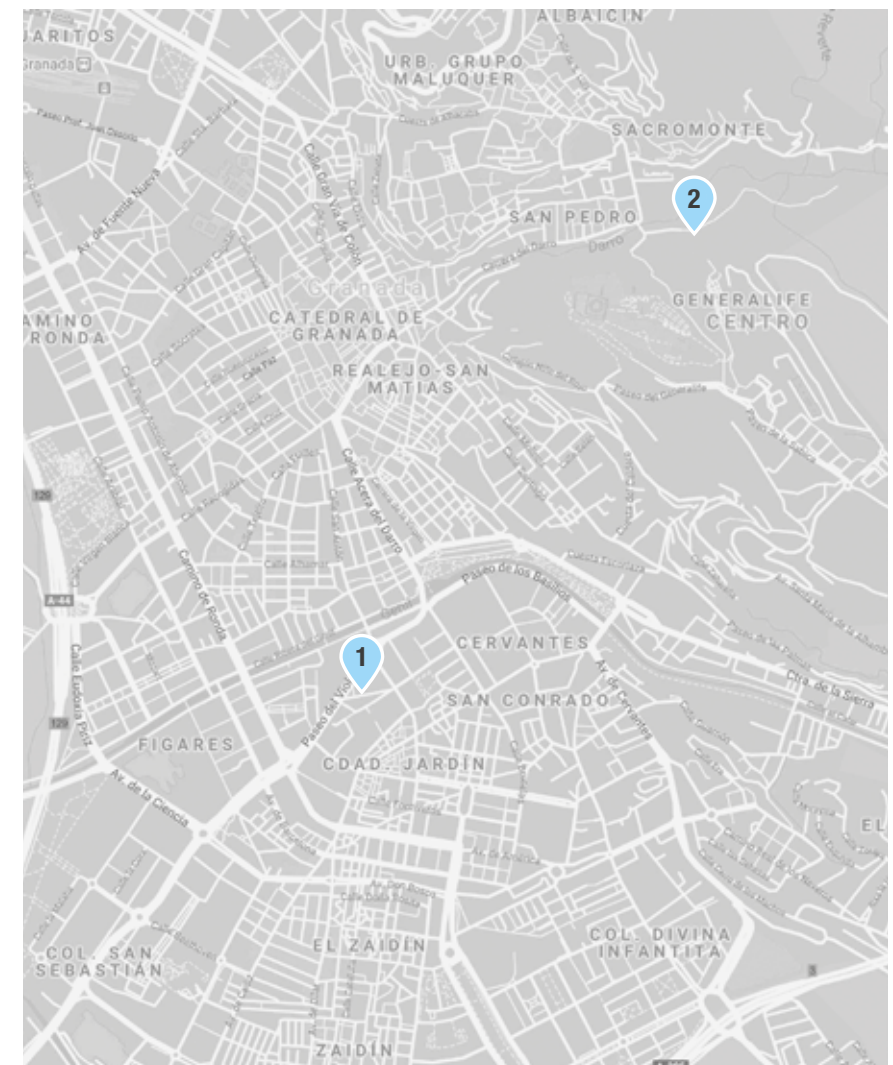
12:20-12:40**FREQUENCY-SCANNED ACTIVE MONOPULSE RADAR BASED ON BLUETOOTH LOW ENERGY DEVICES USING AN ARRAY OF TWO PLANAR LEAKY-WAVE ANTENNAS**

M. Poveda-García, A. Gomez-Alcaraz, A. Gil-Martinez, D. Cañete-Rebenaque, A.S. Martinez-Sala, J.L. Gomez-Tornero, Technical University of Cartagena, Spain;

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T. Weiland, Germany
Y. Wen, China
D.R. Wilton, USA
S. Yan, USA
W.-Y. Yin, China

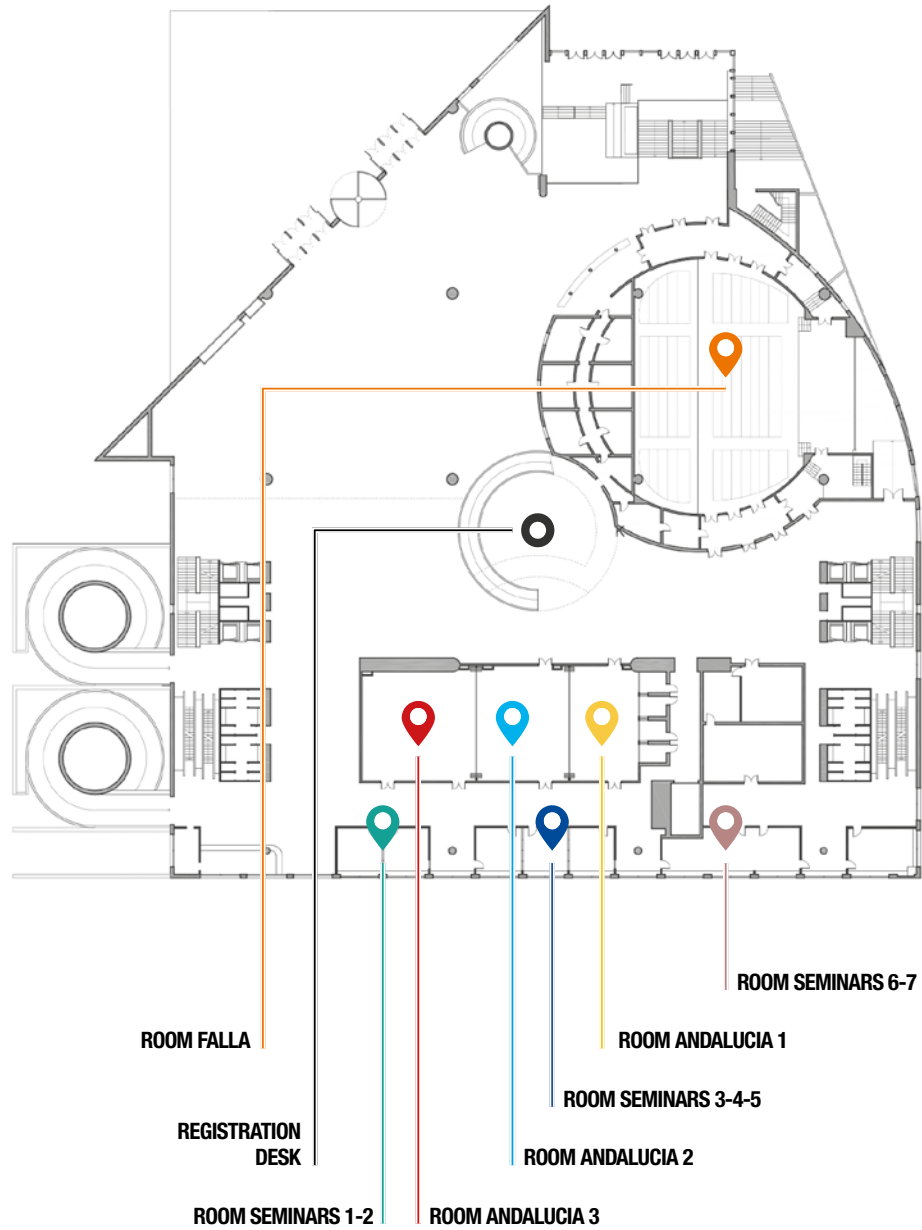
MAP OF GRANADA



1 Granada Conference and Exhibition Centre Paseo del Violón - Granada

2 Restaurant Carmen de los Chapiteles Camino Fuente del Avellano 4 - Granada

GRANADA CONFERENCE AND EXHIBITION CENTRE



ICEAA 19

International Conference on
ELECTROMAGNETICS IN
ADVANCED APPLICATIONS

IEEE APWC 19

IEEE-APS Topical Conference on
ANTENNAS AND PROPAGATION IN
WIRELESS COMMUNICATIONS

