ICEAA 15
IEEE APWC 15

Organized by
POLITECNICO DI TORINO
IEIIT-CNR

In cooperation with
URSI, the International Union of Radio Science
IEEE Antennas and Propagation Society
IEEE Italy Section
IEEE North Italy AP, ED, MTT Chapter

Sponsored by
Istituto Superiore Mario Boella
sulle Tecnologie dell’Informazione
e delle Telecomunicazioni.
IEEE Antennas and Propagation Society
Torino Wireless Foundation

Administrative support services
provided by SELENE SRL
Eventi e Congressi

FINAL PROGRAM
ICEAA - IEEE APWC COMMITTEES

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President of the Torino Wireless Foundation

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Roberto D. Graglia, Politecnico di Torino, Italy

Magdy F. Iskander, University of Hawaii, USA

Paul D. Smith, Macquarie University, Australia

Riccardo Tascone, Head of CNR-IEIIT

Piergiorgio L.E. Uslenghi, University of Illinois at Chicago, USA

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URSI representative:

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SELENE Srl - Eventi e Congressi, Torino, Italy

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Ladislau Matekovits, Politecnico di Torino, Italy

Manuela Trinchero, SELENE Srl - Eventi e Congressi, Torino, Italy

SCIENTIFIC COMMITTEE

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T. S. Bird, Australia;
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W.A. Davis, USA;
R. D. Graglia, Italy;
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G. Lazzi, USA;
H. Nakano, Japan;
A.J. Parfitt, Australia;
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T.K. Sarkar, USA;
P.D. Smith, Australia;
Y. Wen, China;
D. R. Wilton, USA.

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M. F. Cátedra, Spain;
D. B. Davidson, South Africa;
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L. Gürel, Turkey;
M. F. Iskander, USA;
M. A. Lyalinov, Russia;
M. Orefice, Italy;
A. F. Peterson, USA;
H. C. Reader, South Africa;
M. Salazar-Palma, Spain;
M. S. Sharawi, Saudi Arabia;
R. Tascone, Italy;
W. Wiesbeck, Germany;
WELCOME TO THE CONFERENCE

On behalf of the Steering Committee, of the Organizing Committee and of the Scientific Committee, I am glad to welcome all participants to the seventeenth edition of ICEAA, and to the fifth 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.

These Conferences together have 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.

The two conferences altogether feature 55 sessions including 32 special sessions organized by renowned experts. The ICEAA 2015 Conference program consists of 44 sessions including 31 Special Sessions; the IEEE APWC 2015 Conference program consists of 11 sessions including 1 Special Session. About 430 papers are scheduled, out of the 666 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. A half-day Short Course on “Adaptive methodologies for futuristic phased array systems” will be held on Friday afternoon, September 11, by Prof. T.K. Sarkar of the Syracuse University, Syracuse, New York, USA.

The Conferences are organized by the Politecnico di Torino and by the National Research Council of Italy. The Politecnico di Torino, a State University founded in 1859, is one of the major technical universities in Italy. The Politecnico currently numbers 32000 students, with about one third of the 19000 students in Engineering who follow curricula in Information Engineering.

The Conferences are held at the “Torino Incontra” Congress Center. This fully air-conditioned Congress Center is in Torino downtown, near important historical monuments, museums and parks. Don’t miss the opportunity to visit so many interesting places in Torino and its surroundings: I am sure you will enjoy them.

We look forward to seeing you in Torino in September.

Roberto D. Graglia
Chairman of the ICEAA - IEEE APWC Organizing Committee
GENERAL INFORMATION

DATES AND LOCATION
The conferences will be held from 7th to 11th of September 2015, at the “Torino Incontra” Congress Center, Via Nino Costa 8, Torino (see map).

OFFICIAL LANGUAGE
The official language will be 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 conference share a common organization, registration fee, submission site, workshops and short courses, and social events.

On site registration fees are:
IEEE members: 675,00 Euro (VAT included)
Non-IEEE members: 695,00 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
A registration desk will be located in the Hall of the Congress Center. Accompanying persons and late registrants may register, or pre-registrants may pick up conference materials, at the following times: Monday: 7:30÷17:30, Tuesday through Thursday: 7:30÷17:00. The accompanying person fee is 120,00 Euro and only includes the Conference Banquet.

MEALS AND REFRESHMENTS
Coffee breaks and luncheons are included in the registration fee. Luncheons will be served in the Conference Center.

BANQUET
A banquet will be offered to the participants on Wednesday night, at 20:00, at the Castello di Polonghera, via Molino 6, Polonghera (Cuneo).

Please visit: www.castellodipolonghera.it/

Buses depart at 18:15 (sharp) from the Torino Incontra Congress Center. Participants are requested to confirm at the Conference registration desk for their bus transportation.

The winner(s) of the ICEAA - IEEE APWC 15 Young Scientist Award will be announced at the Banquet.

PARKING
Unguarded parking facilities are available around the Congress Center area. However, to park in the centre of Torino, one has usually to buy a parking ticket at the vending machines located close to the parking area. In this part of town it is very difficult to find parking and private cars are not allowed to enter the area (ZTL) from 7:30 to 10:30.

AUDIOVISUAL EQUIPMENT
Each meeting room will be equipped with a notebook. Other equipment will be available only upon written request to the Organizing Committee, to be received before September 3. 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.

INTERNET CONNECTION
The Conference Centre features WI-FI Internet access.
MESSAGES
During the Conference, messages may be directed to participants via Email (iceaa15@iceaa.polito.it) or by calling the Congress Center at +39-011-5576845/6. Messages will be posted in the main hall of the Congress Center.

TRANSPORTATION
Torino International Airport is located about 15 km from the center of the city, and may be reached by bus or taxi. It is conveniently connected to the main European airports (Amsterdam, Brussels, Frankfurt, London, Munich, Paris, Rome, and many others), through which intercontinental connections are available. Alternatively, the intercontinental airport of Milano-Malpensa (120 km from Torino) or the international airport of Milano-Linate (150 km from Torino) may be used. The “Torino Incontra” Congress Center is in the center of the city and is served by several buses and tramways from other parts of town. Tickets cannot be bought on the bus or tram; they must be purchased in advance, at newsstands, bars, tobacco shops, etc.

WEATHER
In mid-September, the weather in north-western Italy is usually fair, with temperatures ranging between 15˚C to 25˚C. Occasional showers are possible; therefore raincoats or umbrellas may be useful.

HOTEL ACCOMMODATIONS
A number of hotel rooms in different price categories have been booked for the period September 6 to 12: to make reservations, please use the form available on www.seleneweb.com/iceaa2015
It is advisable to make an early reservation because hotels are generally full.

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.

OTHER ACTIVITIES
In September there are a number of interesting events in Torino, such as the music festival “MITO Settembre Musica”, art exhibitions, etc. Detailed information will be available at 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: iceaa15@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: iceaa2015@seleneweb.com

TECHNICAL EXHIBITION
A technical exhibition will be held in the area near the Conference Rooms. Exhibitors and others requiring further information on this matter should contact:
SELENE s.r.l.(Mrs. Manuela Trinchero)
Tel. +39 011 7499601
Fax  +39 011 7499576

ICEAA - IEEE APWC 2015
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 5, 2015) who has authored the best ICEAA or IEEE APWC paper in terms of content and impact on Electromagnetics, either as a single author or as the first author of a team of no more
than three authors. The finalists for this Award must present their paper in a special poster session scheduled for Monday afternoon, September 7 2015, in the coffee-break area. 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 2015 Young Scientist Award will be announced at the Conference Banquet on Wednesday evening, September 9, 2015. Since the award announcement and presentation are made at the Conference Banquet, all candidates are expected to attend it.

**SHORT COURSE ON ADAPTIVE METHODOLOGIES FOR FUTURISTIC PHASED ARRAY SYSTEMS**

Prof. Tapan K. Sarkar of the Syracuse University, Syracuse, NY, USA, will hold a half-day short course on adaptive methodologies for futuristic phase array systems, on Friday afternoon, September 11 - room Sella. The short course is free for the Conference registrants. Participants may register for this short course at the conference registration desk.
### TUESDAY, SEPTEMBER 8, 2015

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<td><strong>SESSION 18</strong> ICEAA ELECTROMAGNETICS IN WIRELESS IDENTIFICATION AND SENSING: TOWARD INTELLIGENT AND ENERGY AUTONOMOUS ADVANCED WIRELESS SYSTEMS organized by T. Björninen, L. Ukkonen</td>
<td><strong>SESSION 21</strong> ICEAA TRANSIENT METHODS IN COMPUTATIONAL ELECTROMAGNETISM organized by D.S. Weile Chairs: R. Kastner, D. S. Weile</td>
<td><strong>SESSION 23</strong> IEEE APWC ANTENNAS AND ARRAYS</td>
<td><strong>SESSION 26</strong> ICEAA ELECTROMAGNETIC MODELING OF DEVICES AND CIRCUITS Chairs: D.I.L. de Villiers, P.G. Wild</td>
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**Coffee break 10:00-10:20 - Lunch break 12:20-13:40 - Coffee break 15:40-16:00**

### WEDNESDAY, SEPTEMBER 9, 2015

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**Coffee break 10:00-10:20 - Lunch break 12:20-13:40 - Coffee break 15:40-16:00**

**BANQUET 20:00 - BUSES DEPART AT 18:15**
### THURSDAY, SEPTEMBER 10, 2015

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<td>FIELDS AND WAVES organized by L. Klinkenbusch, T. Weiland</td>
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<td>MODERN PROBLEMS OF MATHEMATICAL AND COMPUTATIONAL ELECTROMAGNETICS AND THEIR ADVANCED APPLICATIONS organized by G.N. Georgiev, M.N. Georgieva-Grosse</td>
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<td>INVERSE PROBLEMS AND NONLINEAR MEDIA organized by Y. Shestopalov</td>
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### FRIDAY, SEPTEMBER 11, 2015

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### Coffee break 10:00-10:20

### Lunch break 12:20-13:40

### Coffee break 15:40-16:00
10:40-11:00
A RAPIDLY CONVERGENT REGULARIZED APPROACH TO TRANSMISSION LINE PROPERTIES FOR ARBITRARILY CONFIGURED MULTI-CONDUCTOR SYSTEMS
E. Vinogradova, G. Safonova, Macquarie University, Australia; T. Topal, Gebze Technical University, Turkey;

11:00-11:20
ANALYTICAL REGULARIZATION METHOD FOR AXIALLY SYMMETRICAL ANTENNAE AND COMPACT RANGE APPLICATIONS
Y.A. Tuchkin, Gebze Technical University, Turkey; S.B. Panin, TUBITAK-MRC, Turkey; M. Sagradian, Kharkov National University, Ukraine; E.D. Vinogradova, P.D. Smith, Macquarie University, Australia; F. Dikmen, Gebze Technical University, Turkey; Ünal, TUBITAK-MRC, Turkey;

MONDAY, SEPTEMBER 7, 2015, 13:40 - ROOM CAVOUR
SESSION 02 - ICEAA
EMC/EMI/EMP
Chair: F. Grassi, D. Poljak

13:40-14:00
DIRECT TIME DOMAIN MODELING OF THE TRANSIENT FIELD TRANSMITTED IN A DIELECTRIC HALF-SPACE FOR GPR APPLICATIONS
D. Poljak, S. Sesnic, University of Split, Croatia; D. Paric, CARNET, Croatia; K. El Khamlichi Drissi, Blaise Pascal University, France;

14:00-14:20
DEDICATED COMPUTATIONAL MODELS FOR THE ELECTROMAGNETIC EMISSIONS OF INTEGRATED CIRCUITS
B. Minnaert, D. Pissoort, N. Stevens, KU Leuven, Belgium;

14:20-14:40
A HIGH-GAIN, BROAD-WALL SLOTTED WAVEGUIDE ANTENNA ARRAY TO BE USED AS PART OF A NARROWBAND HIGH POWER MICROWAVES SYSTEM
S. Bernal, F. Vega, F. Roman. Universidad Nacional de Colombia, Colombia; A. Valero, Universidad Politécnica de Valencia, Colombia;

14:40-15:00
LIGHTNING PROTECTION OF AIRCRAFT SYSTEMS INSTALLED INSIDE COMPOSITE NOSE: PRINCIPAL ANALYSIS
D. Krutilek, Z. Raida, Brno University of Technology, Czech Republic; J. Kucera, Z. Reznicek, Evector spol. s r. o., Czech Republic;

15:00-15:20
APPROXIMATE METHODS FOR EMF COMPLIANCE ASSESSMENTS OF LARGE ARRAY ANTENNAS
E. Degirmenci, B. Thors, C. Törnevik, Ericsson AB, Sweden;

15:20-15:40
DE-EMBEDDING SETUP-RELATED EFFECTS TO CHARACTERIZE AN EM CLAMP FOR CONDUCTED IMMUNITY TESTING
A.F. Finizio, F. Grassi, G. Spadacini, Politecnico di Milano, Italy; R. Colombo, IMQ, Italy; S.A. Pignari, Politecnico di Milano, Italy;
**SESSION 03 - ICEAA**

**ELECTROMAGNETIC PACKAGING AND CONFINEMENT**

organized by J.M. Velázquez Arcos  
Chair: A.R. Rojas, J.M. Velázquez Arcos

16:00-16:20  
**FREDHOLM AND MAXWELL EQUATIONS IN THE CONFINEMENT OF ELECTROMAGNETIC FIELD**  
J.M. Velázquez Arcos, J. Granados-Samaniego, C.A. Vargas,  
Universidad Autónoma Metropolitana, Mexico;

16:20-16:40  
**SYNTHESIS OF NONSTATIONARY PLANE BY A GIVEN FREQUENCY SPECTRUM OF THE REFLECTED FIELD**  
Yu.V. Yukhanov, T.Yu. Privalova, Southern federal university, Russia;

16:40-17:00  
**RESONANT TECHNOLOGY AND ELECTROMAGNETIC PACKAGING**  
J. Granados Samaniego, J.M. Velázquez Arcos, C.A. Vargas,  
F. Tavera Romero, R.T. Hernández López, Universidad Autónoma Metropolitana, Mexico;

17:00-17:20  
**MULTIFRACTAL ANALYSIS OF SEISMIC GEoeLECTRIC SIGNALS OBSERVED PRIOR A EARTHQUAKE OF M6.7**  
A. Ramírez-Rojas, L.R. Moreno-Torres, Ricardo Teodoro Paez-Hernandez,  
Universidad Autónoma Metropolitana, Mexico;

17:20-17:40  
**ELECTROMAGNETIC FIELD PRODUCED BY A CELL PHONE**  
M. Zamora-Gomez, Hospital General ‘Gaudencio gonzález Garza’ La Raza IMSS, Mexico;  
A. Ramírez-Rojas, J.M. Velázquez-Arcos, R.T. Paez-Hernandez, Universidad autónoma metropolitana, Mexico;

17:40-18:00  
**TRANSMISSION SPECTRUM OF A PHOTONIC CRYSTAL WITH COMPLEX PERMITTIVITY IN THZ RANGE**  
A. Sánchez, S. Orozco, Universidad Nacional Autónoma de México, Mexico;

18:00-18:20  
**PACKAGED OPTICAL SENSORS FOR THE ELECTRIC FIELD CHARACTERIZATION IN HARSH ENVIRONMENTS**  
G. Gaborit, IMEP-LAHC, France;  
P. Jarrige, J. Dahdah, Kapteos, France;  
L. Gillette, IMEP-LAHC, France;  
L. Duvillaret, Kapteos, France;

**SESSION 05 - ICEAA**

**HIGH-POWER ELECTROMAGNETICS**

organized by D.V. Giri  
Chair: D.V. Giri, T.S. Wolfe

10:20-10:40  
**EFFECTS OF WAVEGUIDE DISPERSION ON HIGH-POWER MICROWAVE SIGNALS**  
D.V. Giri, Pro-Tech, CA, United States;  
Y. Rahmat-Samii, University of California Los Angeles, CA, United States;

10:40-11:00  
**OPTIMIZATION OF A VIRCATOR USING A NOVEL EVOLUTIONARY ALGORITHM DESIGNED TO REDUCING THE NUMBER OF EVALUATIONS**  
E. Neira, J.F. Vega, J.J. Pantoja, Universidad Nacional de Colombia, Colombia;  
F. Rachidi, Swiss Federal Institute of Technology, Switzerland;

11:00-11:20  
**HIGH POWER ULTRA WIDEBAND SHORT PULSE (UWBS) ELECTROMAGNETICS (EM) APPLICATION FOR WIDE BAND GAP (WBG) PHOTOCONDUCTIVE SEMICONDUCTOR SWITCHES (PCSS)**  
T. Wolfe, S. Francis, D. Langley, J. Petrosky, A. Terzuoli, T. Zens,  
Air Force Institute of Technology, OH, United States;
MONDAY, SEPTEMBER 7, 2015, 13:40 - ROOM EINAUDI

SESSION 06 - ICEAA

STOCHASTIC ELECTROMAGNETIC FIELDS
organized by P. Russer
Chair: L. R. Arnaut, P. Russer

13:40-14:00
CHARACTERIZATION OF PHASE IN VECTOR MEASUREMENTS OF STOCHASTIC FIELDS
L. R. Arnaut, Queen Mary University of London, United Kingdom;

14:00-14:20
NOISE AND VARIATION-AWARE MODELING AND CHARACTERIZATION OF INTEGRATED CIRCUITS USING NETWORK REPRESENTATIONS
S. Wane, NXP Semiconductors France; D. Bajon, Université de Toulouse, France;

14:20-14:40
STOCHASTIC APPROACH FOR POWER INTEGRITY, SIGNAL INTEGRITY AND EMC/EMI ANALYSIS OF MOVING OBJECTS
S. Wane, NXP Semiconductors France; O. Doussin, D. Bajon, Université de Toulouse, France; J. Russer, P. Russer, TUM Munich, Germany;

14:40-15:00
ANALYSIS OF CYCLOSTATIONARY STOCHASTIC ELECTROMAGNETIC FIELDS
J.A. Russer, P. Russer, Technische Universität München, Germany; M. Konovalyuk, A. Gorbunova, A. Baev, Y. Kuznetsov, Moscow Aviation Institute, Russia;

15:00-15:20
NEAR-FIELD PROPAGATION OF CYCLOSTATIONARY STOCHASTIC ELECTROMAGNETIC FIELDS
J.A. Russer, P. Russer, Technische Universität München, Germany; M. Konovalyuk, A. Gorbunova, A. Baev, Y. Kuznetsov, Moscow Aviation Institute, Russia;

MONDAY, SEPTEMBER 7, 2015, 16:00 - ROOM EINAUDI

SESSION 07 - ICEAA

RANDOM AND NONLINEAR ELECTROMAGNETICS
Chair: A. Coatanhay, R. Tcheumeu Tientcheu

16:00-16:20
SUSCEPTIBILITY OF GENERIC IT-NETWORKS
R. Tcheumeu Tientcheu, SII Deutschland GmbH, Germany; D. Pouhè, Reutlingen University, Germany;

16:20-16:40
NONLINEAR ALL OPTICAL DIGITAL AMPLIFICATION OF LIGHT PULSES BASED ON COUPLED PHOTONIC CRYSTAL GUIDING NANOSTRUCTURES
V. Jandieri, Roma-Tre University, Italy; R. Khomeriki, Tbilisi State University, Georgia; G. Schettini, Roma-Tre University, Italy; D. Erni, University of Duisburg-Essen, Germany;
09:20-09:40
2-ELEMENT SLOT MEANDER PATCH ANTENNA SYSTEM FOR LTE-WLAN CUSTOMER PREMISE EQUIPMENT
N. M. Elamin, T. Abd Rahman, UTM, Malaysia;

09:40-10:00
A COMPACT PATCH ANTENNA USING ARTIFICIAL GROUND STRUCTURE WITH HIGH PERMITTIVITY SUBSTRATE
T. Fukusako, T. Nakano, Kumamoto University, Japan;

10:20-10:40
A PROPOSAL OF AMC INSPIRED SMALL ANTENNA MACKEY
S. Makino, T. Moroya, M. Kotaka, K. Itoh, K. Noguchi, T. Hirota, Kanazawa Institute of Technology, Japan;

10:40-11:00
DESIGN OF MICROSTRIP ANTENNA BASED ON THE LIQUID SUBSTRATE
C.-F. Huang, C.-H. Kuo, Tatung University, Taiwan;

11:00-11:20
ANALYTICAL EXPRESSION OF BROADBAND CHARACTERISTICS FOR WIDE-ANGLE PLANAR SECTORIAL ANTENNAS
A. Saitou, J. Long, R. Ishikawa, K. Honjo, The University of Electro-Communications, Japan;

13:40-14:00
WIDE BAND PLANAR MONOPOLE ANTENNA FOR REPEATER USE
A. Watanabe, H. Iwasaki, Shibaura Institute of Technology, Japan;

14:00-14:20
A COMPACT TRI-BAND AND TETRA-BAND SHORT HELICAL ANTENNA ELECTROMAGNETICALLY COUPLED FEED BY A LOOP ANTENNA
A. Suganuma, K. Kagoshima, S. Takeda, M. Umehira, Ibaraki University, Japan;

14:20-14:40
A SPIRAL ANTENNA OVER A HIGH-IMPEEDANCE SURFACE CONSISTING OF FAN-SHAPED PATCH CELLS
M. Tanabe, M. Oyama, Y. Oishi, Y. Masuda, Toshiba Corp., Japan;

14:40-15:00
CIRCULARLY POLARIZED UNIDIRECTIONAL ANTENNA USING PLANAR TENNIS SHAPE STRUCTURE
C. Phongcharoensenich, K. Boonying, King Mongkut’s Institute of Technology Ladkrabang, Thailand;

15:00-15:20
NUMERICAL ANALYSIS OF A BOWTIE-SHAPED GRID ARRAY ANTENNA
T. Kawano, National Defense Academy, Japan; H. Nakano, Hosei University, Japan;

15:20-15:40
A SMALL TUNABLE MULTIBAND ANTENNA WITH PARASITIC ELEMENTS FOR MOBILE APPLICATIONS
Y. Koga, M. Shimizu, Fujitsu Laboratories Limited, Japan; H. Egawa, Fujitsu Kyushu Network Technologies Limited, Japan;

16:00-16:20
A COMPACT LOOP ANTENNA WITH SEVEN RESONANT MODES FOR SMARTPHONES
S. W. Cheung, D. Wu, T. I. Yuk, The University of Hong Kong, China;

16:20-16:40
WIDE-ANGLE SCANNING PHASED ARRAY SYSTEM USING BEAM SWITCHABLE SQUARE LOOP ANTENNA
A. Mehta, A. Pal, Swansea University, United Kingdom;

16:40-17:00
EM SIMULATION AND DESIGN OF FREQUENCY RECONFIGURABLE PLANAR ANTENNA
A. S. Andrenko, SYSU-CMU Shunde International Joint Research Institute, China;

17:00-17:20
GENETIC ALGORITHM USING FRACTAL CONCEPT FOR QUASI OPTIMUM ANTENNA
T. Maruyama, National Institute of Technology, Japan;

17:20-17:40
FREQUENCY PERFORMANCE OF 8 WAVELENGTH RADIUS MINIMAL LAYER NUMBER LENS ANTENNAS
D. Gray, Xi’an Jiatong Liverpool University, China; N. Nikolic, CSIRO, Australia; J. Thornton, Antennas Research, United Kingdom;

17:40-18:00
MULTIPATH MITIGATION TECHNIQUES BASED ON SPATIAL SMOOTHING LINEAR ANTENNA ARRAYS
L.T. Ong, P.K. Tan, National University of Singapore, Singapore;
09:20-09:40
A METHOD TO ENHANCE RADIATION CHARACTERISTICS BY IMPROVING APERTURE PHASE DISTRIBUTION OF ELECTROMAGNETIC BANDGAP RESONATORS ANTENNAS
M.U. Afzal, K.P. Esselle, Macquarie University, Australia; A. Biswas, Indian Institute of Technology, India;

09:40-10:00
ENRICHMENT OF EBG CONTENTS OF PERIODIC STRUCTURES BY GEOMETRY MODULATION
A. De Sabata, Politecnica University Timisoara, Romania; L. Matekovits, Politecnico di Torino, Italy; O. Lipan, University of Richmond, United States;

10:20-10:40
DIFFERENTIAL MICROSTRIP LINES WITH WIDEBAND COMMON-MODE REJECTION BASED ON CHIRPED-EBGS
P. Velez, M. Valero, L. Su, J. Naqui, J. Mata-Contreras, J. Bonache, F. Martin, Universitat Autonoma de Barcelona (IMITEC), Spain;

10:40-11:00
POPULATION-BASED ALGORITHMS APPLIED TO INVERSE SCATTERING PROBLEM FOR DIELECTRIC COATINGS
G. Labate, P. Pirinoli, L. Matekovits, Politecnico di Torino, Italy;

11:00-11:20
2D PERIODIC STRUCTURE FEATURING NEGATIVE GROUP VELOCITY OF BLOCH WAVES
A. De Sabata, ‘Politehnica’ University Timisoara, Romania; L. Matekovits, Politecnico di Torino, Italy; A. Silaghi, ‘Politehnica’ University Timisoara, Romania; U. L. Rohde, Brandenburg University of Technology Cottbus, Germany; M.A. Silaghi, University of Oradea, Romania;

MONDAY, SEPTEMBER 7, 2015, 13:40 - ROOM SELLA
SESSION 10 - ICEAA
INTEGRAL EQUATION AND HYBRID METHODS
Chair: R.R. Boix, C. Craeye

13:40-14:00
AN EFFICIENT 2-D MLFMM-UTD HYBRID METHOD TO MODEL NON-LINE-OF-SIGHT PROPAGATION
G. Karagounis, D. Vande Ginste, D. De Zutter, Ghent University, Belgium;

14:00-14:20
ENHANCED INTEGRAL EQUATION ANALYSIS OF MULTILAYERED PERIODIC STRUCTURES USEFUL FOR THE DESIGN OF REFLECTARRAY ANTENNAS
R. Florencio, R. R. Boix, University of Seville, Spain; J. A. Encinar, Polytechic University of Madrid, Spain;

14:20-14:40
COMPUTATIONALLY EFFICIENT EXTENSION OF A 2D INTEGRAL EQUATION PROPAGATION MODEL TO 3D
I. Kavanagh, C. Brennan, Dublin City University, Ireland;

14:40-15:00
AN EM SCATTERING ALGORITHM FOR ALL MATERIALS
A.D. Seagar, Griffith University, Australia; A.Y. Chantaveerod, Walailak University, Thailand;

15:00-15:20
ANALYSIS OF SCATTERING FROM A FINITE ARRAY OF VARIOUS CIRCULAR CYLINDERS BY USING GLOBAL BASIS FUNCTIONS
K. Yashiro, Chiba University, Japan;

15:20-15:40
A NOVEL APPROACH FOR THE EFFICIENT AND ACCURATE COMPUTATION OF SOMMERFELD INTEGRAL TAILS
E.P. Karabulut, Bahcesehir University, Turkey; M.I. Aksun, Koc University, Turkey;

16:00-17:00
MACRO BASIS FUNCTION INTERACTIONS ACCELERATED WITH THE INHOMOGENEOUS PLANE WAVES
S. Karki, C. Craeye, Université catholique de Louvain, Belgium;

17:00-17:20
INTEGRAL EQUATION AND HYBRID METHODS
Chair: R.R. Boix, C. Craeye

13:40-14:00
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R. Florencio, R. R. Boix, University of Seville, Spain; J. A. Encinar, Polytechic University of Madrid, Spain;

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E.P. Karabulut, Bahcesehir University, Turkey; M.I. Aksun, Koc University, Turkey;

16:00-17:00
MACRO BASIS FUNCTION INTERACTIONS ACCELERATED WITH THE INHOMOGENEOUS PLANE WAVES
S. Karki, C. Craeye, Université catholique de Louvain, Belgium;
08:20-08:40
LEVEL-SET SHAPE OPTIMIZATION FOR PLANAR ANTENNA ARRAYS
Z. Zhao, C. Pichot, Univ. Nice Sophia Antipolis, France; C. Dedeban, Orange Labs, France;

08:40-09:00
QUADRATIC FORWARD MODEL FOR RF TOMOGRAPHY: EXPERIMENTAL VALIDATION
V. Picco, University of Illinois at Chicago, IL, United States; G. Gennarelli, National Research Council, Italy; T. Negishi, D. Errico, University of Illinois at Chicago, IL, United States; F. Soldovieri, National Research Council, Italy;

09:00-09:20
EXPLOITING VIRTUAL EXPERIMENTS FOR THE SOLUTION OF INVERSE SCATTERING PROBLEM
M.T. Bevacqua, University Mediterranea of Reggio Calabria, Italy; L. Crocco, CNR-IREA, Napoli, Italy; L. Di Donato, University of Catania, Italy; T. Isernia, R. Palmeri, University Mediterranea of Reggio Calabria, Italy;

09:20-09:40
A TWO STEP LINEAR INVERSION STRATEGY FOR IMAGING SIMPLE SHAPES
F. Ciaramaglia, Selex Es, Italy; A. Dell’Aversano, G. Leone, Seconda Università di Napoli, Italy; W. Mellano, Selex ES, Italy; R. Pierr, R. Solimene, Seconda Università di Napoli, Italy;

09:40-10:00
MULTI-FOCUSING INEXACT-NEWTON METHOD FOR THREE-DIMENSIONAL MICROWAVE IMAGING
M. Salucci, L. Tenuti, University of Trento, Italy; A. Fedeli, A. Randazzo, University of Genoa, Italy;

10:20-10:40
DESIGN OF A SLIM WIDEBAND-ANTENNA TO OVERCOME THE STRONG REFLECTION OF THE AIR-TO-SAMPLE INTERFACE IN MICROWAVE IMAGING
M. Lanini, S. Poretti, A. Salvadè, R. Monleone, University of Applied Sciences of Southern Switzerland, Switzerland;

10:40-11:00
RECONSTRUCTION OF NON-CONSTANT VELOCITY PROFILES IN PNEUMATIC PIPELINES BY MICROWAVE INVERSE SCATTERING TECHNIQUES
M. Brignone, M. Raffetto, A. Randazzo, University of Genoa, Italy;

11:00-11:20
DETECTION OF DEBRIS (FOD) ON RUNWAYS IN W-BAND: RELEVANCE AND VALIDITY DOMAIN OF TWO-DIMENSIONAL APPROACHES
F. Nsengiyumva, C. Pichot, I. Aliferis, J. Lanteri, C. Migliaccio, Univ. Nice Sophia Antipolis, CNRS, LEAT, France;
10:40-11:00
CAN AN ANN BASED RADAR DATA PROCESSING APPROACH BE AN AID IN BREAST CANCER DETECTION?
S. Caorsi, C. Lenzi, University of Pavia, Italy;

TUESDAY, SEPTEMBER 8, 2015, 11:00 - ROOM CAVOUR

SESSION 15 - ICEAA
ELECTROMAGNETIC APPLICATIONS FOR ENVIRONMENTAL MONITORING
organized by G. Perona
Chair: M. Allegretti, G. Perona

11:00-11:20
HIGH RESOLUTION X-BAND RADAR RAINFALL ESTIMATES FOR A MEDITERRANEAN TO HYPER-ARID TRANSITION AREA
F. Marra, A. Lokshin, Hebrew University of Jerusalem, Israel; R. Notarpietro, Politecnico di Torino, Italy; M. Gabella, MeteoSwiss, Switzerland; M. Branca, Politecnico di Torino, Italy; D. J. Bonfil, Agricultural Research Organization, Israel; E. Morin, Hebrew University of Jerusalem, Israel;

11:20-11:40
EXTREME RAIN EVENTS ANALYSIS USING X-BAND WEATHER RADAR
S. Bertoldo, CINFAI, Politecnico di Torino, Italy; M. Allegretti, G. Greco, Envisens Technologies s.r.l., Italy; C. Lucianaz, CINFAI, Politecnico di Torino, Italy;

11:40-12:00
A SOLUTION FOR MONITORING OPERATIONS IN HARSH ENVIRONMENT: A RFID READER FOR SMALL UAV
G. Greco, Envisens Technologies s.r.l., Italy; C. Lucianaz, S. Bertoldo, CINFAI, Politecnico di Torino, Italy; M. Allegretti, Envisens Technologies s.r.l., Italy;

12:00-12:20
REAL TIME OUTDOOR LOCALIZATION OF BURIED RFID TAGS THROUGH STATISTICAL METHODS
C. Lucianaz, G. Greco, S. Bertoldo, M. Allegretti, CINFAI, Politecnico di Torino, Italy;

TUESDAY, SEPTEMBER 8, 2015, 08:00 - ROOM CAVOUR

SESSION 14 - ICEAA
ELECTROMAGNETIC APPLICATIONS TO BIOMEDICINE
Chair: A.O. Alamoudi, D. Poljak

08:00-08:20
GAIN ENHANCEMENT OF IMPLANTED ANTENNA FOR MEDICAL APPLICATIONS
A. AlAmoudi, KACST, Saudi Arabia; S. Alamri, Albaha University, Saudi Arabia; R. Langley, University of Sheffield, United Kingdom;

08:20-08:40
COMPARISON OF A TMS INDUCED FIELDS IN HOMOGENEOUS ADULT AND CHILD BRAIN MODELS USING THE SURFACE INTEGRAL EQUATION APPROACH
M. Cvetkovic, D. Poljak, University of Split, Croatia;

08:40-09:00
EFFECT OF MAGNETIC CORE AND HIGHER OPERATIONAL FREQUENCY ON SENSITIVITY IN FREQUENCY SHIFT DETECTION IN WIRELESS PASSIVE MINIMALLY INVASIVE INTRACRANIAL PRESSURE MONITORING
M. W. A. Khan, M. H. Behfar, T. Björninen, L. Sydänheimo, L. Ukkonen, Tampere University of Technology, Finland;

09:00-09:20
DEEP TRANSCRANIAL MAGNETIC STIMULATION FOR THE TREATMENT OF NEUROPSYCHIATRIC DISORDERS IN ELDERLY PEOPLE: ELECTRIC FIELD ASSESSMENT
S. Fiocchi, M. Parazzini, I. Liorni, CNR-IETT, Italy; Y. Roth, A. Zangen, Ben-Gurion University of the Negev, Israel; P. Ravazzani, CNR-IETT, Italy;

09:20-09:40
STUDY OF THE EXPOSURE OF 1 YEAR-OLD INFANT TO 3G TABLET AND FEMTOCELL USING POLYNOMIAL CHAOS THEORY
I. Liorni, M. Parazzini, S. Fiocchi, IEIIT-CNR, Italy; P. Kersaudy, N. Varsier, Orange, France; P. Ravazzani, IEIIT-CNR, Italy; J. Wiart, Orange, France;

09:40-10:00
MILLIMETER WAVE SLOT ARRAY FOR ON-BODY COMMUNICATION
V. Hebelka, Z. Raida, Brno University of Technology, Czech Republic;

10:20-10:40
DEEP TRANSCRANIAL MAGNETIC STIMULATION FOR THE TREATMENT OF NEUROPSYCHIATRIC DISORDERS IN ELDERLY PEOPLE: ELECTRIC FIELD ASSESSMENT
S. Fiocchi, M. Parazzini, I. Liorni, CNR-IETT, Italy; Y. Roth, A. Zangen, Ben-Gurion University of the Negev, Israel; P. Ravazzani, CNR-IETT, Italy;

10:40-11:00
THE APPLICATION OF THE ELEMENT THEOREM TO THE OPTIMAL DESIGN OF IMPEDANCE-LOADED, ELECTRICALLY-SMALL ANTENNAS
J. McLean, TDK, TX, United States; H. Foltz, University of Texas Pan American, TX, United States; D. Gray, R. Sutton, TDK, TX, United States;

14:00-14:20
ON BOUNDS OF THE IMPEDANCE MATCHING BANDWIDTH FOR ANTENNAS
B. L. G. Jonsson, KTH Royal Institute of Technology, Sweden;
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<th>Time</th>
<th>Session 18 - ICEAA</th>
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| 08:20-08:40  | **ON THE USE OF TIME-MODULATED ARRAYS FOR SMART WIRELESS POWER TRANSMISSION**  
D. Masotti, V. Rizzoli, A. Costanzo, University of Bologna, Italy; |
| 08:40-09:00  | **ULTRA-WIDEBAND CORK SUBSTRATE-INTEGRATED-WAVEGUIDE CAVITY-BACKED SLOT ANTENNA**  
O. Caytan, S. Agneessens, S. Lemey, D. Vande Ginste, P. Demeester,  
H. Rogier, Ghent University/iMinds, Belgium; |
| 09:00-09:20  | **MANUFACTURING OF ANTENNAS FOR PASSIVE UHF RFID TAGS BY DIRECT WRITE DISPENSING OF COPPER AND SILVER INKS ON TEXTILES**  
T. Björninen, J. Virkki, L. Sydänheimo, L. Ukkonen, Tampere University of Technology, Finland; |
| 09:20-09:40  | **PASSIVE UHF RFID TILT SENSOR**  
M.A. Ziai, J.C. Batchelor, University of Kent, United Kingdom; |
| 09:40-10:00  | **INTERMODULATION COMMUNICATION PRINCIPLE: PASSIVE WIRELESS SENSOR NETWORKS FOR INTERNET-OF-THINGS**  
P. Pursula, J. Flak, N. Pesonen, O. Saarela, VTT Technical Research Centre of Finland, Finland; |

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<th>Time</th>
<th>Session 19 - IEEE APWC</th>
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| 10:20-10:40  | **MEASURING RAIN WITH MICROWAVE LINKS: A PILOT EXPERIMENT IN ECUADOR**  
B. Ramos, ESPOL, Ecuador; M. D’Amico, Politecnico di Milano, Italy;  
J. Santos; I. Nolivos, ESPOL, Ecuador; A. Manzoni, Politecnico di Milano, Italy;  
R. Ponguillo, J. Gomez; T. Chavez, ESPOL, Ecuador; |
| 10:40-11:00  | **MISO UNIFORM THEORY OF DIFFRACTION BASED CHANNEL MODEL FOR MOBILE WIRELESS COMMUNICATIONS IN URBAN AREAS**  
A. Tajvidy, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran;  
A. Ghorbani, Amirkabir University of Technology, Iran; |
11:00-11:20
USE OF PARABOLIC EQUATION WIDE-ANGLE FOR CALCULATION OF PATH LOSS IN INDOOR ENVIRONMENT
R.A.N. Oliveira, F.N.B. Magno, J.F. Souza, K. Cozzolino, G.P.S. Cavalcante, UFPA, Brazil;

11:20-11:40
OPTIMIZED INDOOR PROPAGATION MODEL FOR OFFICE ENVIRONMENT AT GSM FREQUENCIES
M.A. Erol, NETAS Telecommunications Inc., Turkey; S.S. Seker, Bogazici University, Turkey; F. Kunter, Marmara University, Turkey; A.Y. Citkaya, NETAS Telecommunications Inc., Turkey;

11:40-12:00
PRELIMINARY FIELD TESTS RESULTS OF ISDB-TB DIGITAL TV TRANSMISSION IN THE VHF-HIGH BAND

TUESDAY, SEPTEMBER 8, 2015, 13:40 - ROOM EINAUDI

SESSION 20 - ICEAA

RECENT ADVANCEMENT OF ELECTROMAGNETIC THEORY
organized by H. Shirai
Chair: K. Goto, H. Shirai

13:40-14:00
UNCERTAINTY ANALYSIS OF FAR FIELD ANTENNA FACTORS USING AMPLITUDE CENTER MODIFIED EQUATION
S. Kurokawa, M. Hirose, M. Ameya, National Institute of Advanced Industrial Science and Technology of Japan, Japan;

14:00-14:20
PARAMETRIC MODEL OF A SCATTERING SYSTEM FOR RADAR TARGET IDENTIFICATION
M. Nishimoto, Kumamoto University, Japan;

14:20-14:40
SCATTERING OF A GAUSSIAN BEAM WAVE BY A SINUSOIDALLY DEFORMED EDGE
A. Komiyama, Osaka Electro-Communication University, Japan;

14:40-15:00
A NUMERICAL METHOD FOR THE ESTIMATION OF RELATIVE PERMITTIVITY OF DIELECTRIC MATERIALS
A. N. Nguyen, H. Shirai, Chuo University, Japan;

15:00-15:20
STUDY ON TRANSIENT SCATTERED FIELD FROM A CYLINDRICALLY CURVED CONDUCTING OPEN SHEET WITH TWO STRAIGHT EDGES EXCITED BY UWB PULSE WAVE
K. Goto, N. Sumikawa, T. Santikul, R. Asai, National Defense Academy, Japan;

15:20-15:40
STUDY ON TRANSIENT SCATTERED ELECTRIC FIELD FROM A COATED CONDUCTING CYLINDER COVERED WITH A THIN LOSSY DIELECTRIC MATERIAL EXCITED BY UWB PULSE WAVE
K. Goto, T. Santikul, R. Asai, N. Sumikawa, National Defense Academy, Japan;

16:00-16:20
WIENER-HOPF ANALYSIS OF THE PLANE WAVE DIFFRACTION BY A THIN MATERIAL STRIP: THE CASE OF H POLARIZATION
T. Nagasaka, K. Kobayashi, Chuo University, Japan;

16:20-16:40
A COMPACT TRI-BAND METAMATERIAL ANTENNA FOR WLAN AND WIMAX APPLICATIONS
H. N. Quang, H. Shirai, Chuo University, Japan;

16:40-17:00
TRANSMISSION CHARACTERISTIC ON A PARTIALLY RIDGE-LOADED COMPOSITE RIGHT/LEFT-HANDED CYLINDRICAL WAVEGUIDE
S. Nishimura, H. Deguchi, M. Tsuji, Doshisha University, Japan;

17:00-17:20
SHAPE OF RESONANT ELEMENT AND THEIR ARRANGEMENT FOR BETTER PERFORMANCE OF REFLECTARRAY
S. Matsumoto, H. Deguchi, M. Tsuji, Doshisha University, Japan;

17:20-17:40
IMPROVED PRIMARY-CHARACTERISTIC BASIS FUNCTION METHOD FOR ANALYZING THE RADAR CROSS SECTION CHARACTERISTICS OF SPECIFIC COORDINATE PLANE
T. Tanaka, Y. Inasawa, Y. Nishioka, H. Miyashita, Mitsubishi Electric Corp., Japan;

TUESDAY, SEPTEMBER 8, 2015, 08:00 - ROOM GIOLITTI

SESSION 21 - ICEAA

TRANSPORT METHODS IN COMPUTATIONAL ELECTROMAGNETISM
organized by D. Weile
Chair: R. Kastner, D. S. Weile

08:00-08:20
A HIGH ORDER ACCURATE, LOW FREQUENCY STABLE CONVOLUTION QUADRATURE METHOD FOR THE SOLUTION OF TIME-DOMAIN ELECTROMAGNETICS PROBLEMS
D. S. Weile, University of Delaware, United States;

08:20-08:40
A MULTILEVEL NON-UNIFORM GRID TIME DOMAIN ALGORITHM FOR FAST EVALUATION OF TRANSIENT WAVE FIELDS
N. Costa, A. Boag, Tel Aviv University, Israel;

08:40-09:00
A HYBRID DGTD SCHEME FOR TRANSIENT ANALYSIS OF ELECTROMAGNETIC FIELD INTERACTIONS ON MICROWAVE SYSTEMS LOADED WITH THIN WIRES
P. Li, Y. Shi, H. Bagci, KAUST, Saudi Arabia;
13:40-14:00
OPTIMIZATIONS OF EFIE AND MFIE COMBINATIONS IN HYBRID FORMULATIONS OF CONDUCTING BODIES
B. Karaosmanoglu, C. Onol, O. Ergul, Middle East Technical University, Turkey;

14:00-14:20
COMPARISON OF APPROXIMATE AND FULL-WAVE ELECTROMAGNETIC NUMERICAL MODELING OF MICROSTRIP MATCHING NETWORKS
B. Bukvic, A. Ilic, M. Ilic, University of Belgrade, Serbia

14:20-14:40
EFFICIENT COMPUTATION OF ELECTROMAGNETIC WAVE FIELDS ON UNBOUNDED DOMAINS USING STABILITY-CORRECTED WAVE FUNCTIONS AND KRYLOV SUBSPACE PROJECTION METHODS
V. Druskin, Schlumberger Doll Research, MA, United States; R. Remis, Delft University of Technology, Netherlands; M. Zaslavsky, Schlumberger Doll Research, MA, United States; J. Zimmerling, Delft University of Technology, Netherlands;

14:40-15:00
MILLION PLUS UNKNOWN MOM LU FACTORIZATION ON A PC
J. Shaeffer, Matrix Compression Technologies, LLC, GA, United States;

15:00-15:20
FURTHER PROGRESS WITH FAST AND RELIABLE SHADOWING DETERMINATION FOR MESH-BASED PO ANALYSIS
D.P. Xiang, M.M. Botha, Stellenbosch University, South Africa;

15:20-15:40
FAST ITERATIVE METHOD FOR COMPUTING ELECTROMAGNETIC SCATTERING FROM RANDOMLY ROUGH SURFACES
V. Pham-Xuan, D. Trinh-Xuan, M. Condon, C. Brennan, Dublin City University, Ireland;

16:00-16:20
ERROR ANALYSIS OF THE HARMONICS-BASED PLANE WAVE METHOD
E. Martini, University of Siena, Italy; S. Karki, C. Craeye, Université catholique de Louvain, Belgium; S. Maci, University of Siena, Italy;

16:20-16:40
ACCURATE AND STABLE MATRIX-FREE TIME-DOMAIN METHOD INDEPENDENT OF ELEMENT SHAPE FOR GENERAL ELECTROMAGNETIC ANALYSIS
J. Yan, D. Jiao, Purdue University, IN, United States;

16:40-17:00
RECENT PROGRESS IN THE ANALYSIS OF PLASMONIC ANTENNAS
X. Zheng, G. A. E. Vandenbosch, V. V. Moshchalkov, KU Leuven, Belgium;

17:00-17:20
ANALYSIS OF FINITE ANTENNA ARRAYS WITH GENERALIZED SCATTERING-ADMITTANCE OPERATORS
S. Mokhlespour, V. Lancellotti, A. G. Tijhuis, Eindhoven University of Technology, Netherlands;
**SESSION 23 - IEEE APWC**

**ANTENNAS AND ARRAYS**
Chair: D.I.L. de Villiers, P.G. Wiid

08:20-08:40  
**Design and Characterization of 1-Bit Passive Unit-Cells for Transmit-Arrays and Frequency Selective Surfaces in V-Band**  
H. Kaouach, HF APW Communications, France; A. Kabashi, ECED/ UQU, Saudi Arabia;

08:40-09:00  
**Novel Formulation of Coefficients of Low-Pass Prototype Filter for the Design of Four-Element Planar Filtering Antenna Array**  
M. Kufa, Z. Raida, Brno University of Technology, Czech Republic; J. Mateu, Polytechnic University of Catalonia, Spain;

09:00-09:20  
**Investigation of Reconfigurability for a Stacked Microstrip Patch Antenna Pattern Targeting 5G Applications**  
A. Bondarik, D. Sjöberg, Lund University, Sweden;

09:20-09:40  
**Coupled Structural–Electromagnetic Numerical Modeling and Analysis of Large Reflector Antenna**  
N. Jekabsons, S. Upnere, Ventspils University Colledge, Latvia;

09:40-10:00  
**Multi-Objective Optimization of Cassegrain Reflector Feeds Using Space Mapping Surrogate Models**  
D.I.L. De Villiers, Stellenbosch University, South Africa; S.M. Koziel, Reykjavik University, Iceland;

10:20-10:40  
**Main Functions Ensured by Symmetric Circular and Straight Open Ended Slots Etched on the Radiating Patch of a Compact UWB Antenna**  
M. Hayouni, F. Choubani, Sup’Com, Tunisia; T.-H. Vuong, J. David, ENSEEIHT, France;

10:40-11:00  
**A 3D-Printed PLA Plastic Conical Antenna with Conductive-Paint Coating for RFI Measurements on MeerKat Site**  
J.A. Andriambeloson, P.G. Wiid, University of Stellenbosch, South Africa;

**SESSION 24 - ICEAA**

**FUNCTIONAL MATERIALS FOR ELECTROMAGNETIC APPLICATIONS**
organized by L. Matekovits, I. Peter
Chair: L. Matekovits, I. Peter

13:40-14:00  
**Static and Dynamic Properties of Magnetic Nanostructured Films for MagnetoSensing Applications**  
A. Manzin, G. Barrera, F. Celegato, M. Coïsson, P. Tiberto, Istituto Nazionale di Ricerca Metrologica (INRIM), Italy;

14:00-14:20  
**Multi-Dimensional Real-Time Spectrum Analysis for High-Resolution Signal Processing**  
S. Gupta, C. Caloz, Polytechnique de Montreal, Canada;

14:20-14:40  
**On the EBGs of Shielded 2D Periodic Structures with Metal Inclusions in the Dielectric Layer**  
L. Matekovits, Politecnico di Torino, Italy; A. De Sabata, Politehnica University Timisoara, Romania; I. Peter, Politecnico di Torino, Italy; J. Füzi, Wigner Research Centre for Physics, Budapest, Hungary;

14:40-15:00  
**Titania-Cobalt Ferrite Ceramic Composites for High Frequency Magnetic Applications**  
P. Galizia, I. V. Ciuchi, CNR-ISTEC, Italy; M. Anbinderis, R. Grigalaitis, Vilnius University, Lithuania; C. Galassi, CNR-ISTEC, Italy;

15:00-15:20  
**Bending Impact on a Flexible Ultra-Wideband Conductive Polymer Antenna**  
S.J. Chen, The University of Adelaide, Australia; B. Chivers; R. Shepherd, The University of Sydney, Australia; C. Fumeaux, The University of Adelaide, Australia;
SESSION 25 - IEEE APWC

WIRELESS AND MOBILE NETWORKS
Chair: B.P. de Hon, M. Moghaddam

16:00-16:20
ON-ROOF WIRELESS LINK OPERATING AT 60 GHz
J. Velim, Z. Raida, J. Lacik, J. Lambor, M. Kotol, Brno University of Technology, Czech Republic;

16:20-16:40
STUDY ON INFLUENCE OF ELECTROMAGNETIC DISTURBANCE ON WIRELESS SENSOR UNIT IN SUBSTATION
B. An, W. Zhang, North China Electric Power University, China; Z. Wang, China Electric Power Research Institute, China;

16:40-17:00
ADAPTIVE SUB-MHZ MAGNETIC INDUCTION-BASED SYSTEM FOR MID-RANGE WIRELESS COMMUNICATION IN SOIL
A. Silva, M. Moghaddam, University of Southern California, CA, United States;

17:00-17:20
MICROMACHINED MICROWAVE CAVITY RESONATOR FILTERS FOR 5G: A FEASIBILITY STUDY
R. van Kemenade, A.B. Smolders, B.P. de Hon, Eindhoven University of Technology, Netherlands;

SESSION 26 - ICEAA

ELECTROMAGNETIC MODELING OF DEVICES AND CIRCUITS
Chair: A. Abramowicz, I. Triandaf

08:00-08:20
SPATIOTEMPORAL CHAOTIC DYNAMICS IN A TRANSMISSION LINE MODEL
I. Triandaf, Naval Research Laboratory, DC, United States;

08:20-08:40
AN IMPROVED ALGORITHM FOR THE CREATION OF HOMOGENEOUS MAGNETIC FIELD DISTRIBUTIONS
B. Minnaert, N. Stevens, KU Leuven, Belgium;

08:40-09:00
HIGH DIRECTIVITY COUPLERS REALIZED IN MICROSTRIP LINE TECHNOLOGY
A. Abramowicz, A. Golaszewski, L. Kowalczyk, Warsaw University of Technology, Poland;

09:00-09:20
THE CHARACTERISTIC OF PIN DIODE LIMITER UNDER HIGH POWER MICROWAVE USING TIME DOMAIN VOLUME SURFACE INTEGRAL EQUATION
S.T. Chen, D.Z. Ding, Z.H. Fan, R.S. Chen, Nanjing University of Science and Technology, China;
SESSION 27/A - ICEAA
ARRAY SYSTEMS FOR RADIO ASTRONOMY AND SPACE APPLICATIONS: DESIGN, MEASUREMENT AND CALIBRATION
organized by E. de Lera Acedo, G. Virone
Chair: E. de Lera Acedo, G. Virone

13:40-14:00
A WIDEBAND LOW NOISE TILE FOR THE SKA MID FREQUENCY APERTURE ARRAY
R.H. Witvers, E.E.M. Woestenburg, ASTRON, Netherlands;

14:00-14:20
RECENT ADVANCES ON THE DESIGN OF RANDOM SPARSE ARRAYS MADE OF LOG-PERIODIC ANTENNA ELEMENTS FOR THE SKA AA-MID INSTRUMENT
E. Colin Beltran, E. de Lera Acedo, A. Faulkner, University of Cambridge, United Kingdom; B. Wakley, Cambridge Consultants, United Kingdom;

14:20-14:40
PATTERN SHAPING AND SYNTHESIS OF PLANAR LEAKY-WAVE-BASED ARRAYS FOR SATELLITES COMMUNICATIONS
F. Scattone, M. Ettorre, B. Fuchs, R. Sauleau, IETR, France; N.J.G. Fonseca, ESA, Netherlands;

14:40-15:00
ON THE GEOMETRY OF THE SQUARE KILOMETER ARRAY MID-FREQUENCY APERTURE ARRAY
A. El-makadema, Y. Zhang, M. Yang, A.K. Brown, The University of Manchester, United Kingdom;

15:00-15:20
EFFICIENCY ENHANCEMENT CONSIDERATION FOR A LOW-FREQUENCY FR-ORA ARRAY
E.O. Farhat, K.Z. Adami, University of Malta, Malta;

15:20-15:40
DIFFERENTIAL FRONT-END DESIGN FOR MID-FREQUENCY APERTURE ARRAY DESIGN
Y. Zhang, A.K. Brown, M. Yang, A. El-Makadema, The University of Manchester, United Kingdom; S.F. Harison, S. Bosse, Observatoire de Paris, France;

16:00-16:20
MEASURED SENSITIVITY OF THE FIRST MARK II PHASED ARRAY FEED ON AN ASKAP ANTENNA

16:20-16:40
MULTICOPTER METROLOGY PLATFORM FOR PROPAGATION MEASUREMENTS
H. Pienaar, H.C. Reader, Stellenbosch University, South Africa;

SESSION 27/B - ICEAA
ARRAY SYSTEMS FOR RADIO ASTRONOMY AND SPACE APPLICATIONS: DESIGN, MEASUREMENT AND CALIBRATION
organized by E. de Lera Acedo, G. Virone
Chair: E. de Lera Acedo, G. Virone

08:00-08:20
INSTRUMENTATION OF THE BELGIAN RADIO METEOR STATIONS (BRAMS)
S. Ranvier, H. Lamy, M. Anciaux, S. Calders, E. Gamby, J. De Keyser, Belgian Institute for Space Aeronomy, Belgium;

08:20-08:40
RADIO ARRAY OF PORTABLE INTERFEROMETRIC DETECTORS (RAPID): DEVELOPMENT OF A DEPLOYABLE MULTIPLE APPLICATION RADIO ARRAY
F. D. Lind, C. J. Lonsdale, MIT Haystack Observatory, MA, United States; A. J. Faulkner, University of Cambridge, United Kingdom; C. Mattmann, JPL, CA, United States; N. Razavi-Ghods, E. de Lera Acedo, P. Alexander, University of Cambridge, United Kingdom; J. Marchese, R. McWhirter, C. Eckert, J. Viirinen, R. Schaefer, W. Rideout, R. Cappallo, V. Pankratius, D. Oberoi, MIT Haystack Observatory, MA, United States; S. Khudikyan, M. Joyce, C. Goodale, M. Boustani, L. Cinquini, R. Verma, M. Starch, JPL, CA, United States;

08:40-09:00
SARDINIA ARRAY DEMONSTRATOR: INSTRUMENT OVERVIEW AND STATUS
P. Bolli, G. Comoretto, INAF-OAA, Italy; D. Dallacasa, UNIBO, Italy; M.Z. Farooqui, CNR-IEIIT, Italy; D. Fierro, INAF, Italy; F. Gaudiomonte, F. Govoni, INAF-OAC, Italy; A. Lingua, POLITO, Italy; P. Marongiu, INAF-OAC, Italy; A. Mattana, INAF-IRA, Italy; A. Mecchi, INAF-OAC, Italy; G. Naldi, INAF-IRA, Italy; F. Paonessa, CNR-IEIIT, Italy; F. Perini, INAF-IRA, Italy; T. Pisanu, A. Podighe, I. Porceddu, INAF-OAC, Italy; I. Prandoni, G. Pupillo, S. Rusticelli, M. Schiaffino, INAF-IRA, Italy; F. Schillirò, INAF-OACT, Italy; G. Serra, INAF-OAC, Italy; G. Tartarini, UNIBO, Italy; A. Tibaldi, CNR-IEIIT, Italy; T. Venturi, INAF-IRA, Italy; G. Virone, CNR-IEIIT, Italy; A. Zanichelli, INAF-IRA, Italy;
WEDNESDAY, SEPTEMBER 9, 2015, 13:40 - ROOM CAVOUR

SESSION 28 - ICEAA

ANTENNA-FEED CHAINS AND FRONT-ENDS FOR SPACE AND GROUND APPLICATIONS
organized by G. Addamo, O. Peverini
Chair: G. Addamo, O. Peverini

13:40-14:00
A NOVEL APPROACH FOR HIGHER-ORDER MODE EXTRACTION IN COMMUNICATION SATELLITE FEED CHAINS WITH TRACKING CAPABILITY
N.J.G. Fonseca, European Space Agency, Netherlands;

14:00-14:20
PRESENT AND FUTURE FEED SYSTEMS FOR ESA DEEP SPACE ANTENNAS
P. Besso, ESA-ESOC, Germany;

14:20-14:40
TURNSTILE-BASED ANTENNA FEED SYSTEMS
Y. Konkel, C. Hartwanger, M. Schneider, Airbus DS GmbH, Germany;

14:40-15:00
DESIGN AND VALIDATION OF A X/KU BAND FEED SYSTEM FOR SCANSAR ANTENNA
P. Cecchini, R. Mizzoni, G. Orlando, Thales Alenia Space, Italy; F. Hélière, K. Van’t Klooster, ESA/ESTEC TEC-EEA, Netherlands;

15:00-15:20
DESIGN OF MICROWAVE WAVEGUIDE DEVICES FOR SPACE AND GROUND APPLICATION IMPLEMENTED BY ADDITIVE MANUFACTURING
J.R. Montejo-Garai, I. Saracho-Pantoja, C.A. Leal-Sevillano, J.A. Ruiz-Cruz, UAM, Spain; J. Rebollar, ETSIT-UPM, Spain;

15:20-15:40
A W-BAND POLARIMETER FOR RADIO ASTRONOMY APPLICATIONS: DESIGN AND SIMULATION
J.L. Cano, E. Villa, V. Teran, E. Gonzalez, L. De la Fuente, E. Artal, A. Mediavilla, Universidad de Cantabria, Spain;

16:00-16:20
A COMPACT SIDEBAND-SEPARATING (2SB) ARRANGEMENT USING A TURNSTILE
D. Henke, NRC Herzberg Astronomy and Astrophysics, Canada;

16:20-16:40
Q-BAND ANTENNA-FEED SYSTEM FOR THE LARGE SCALE POLARIZATION EXPLORER BALLOON EXPERIMENT
O. A. Peverini, G. Virone, IEIIT-CNR, Italy; F. Del Torto, C. Franceschet, Università degli Studi di Milano, Italy; F. Villa, INAF-IASF, Italy; M. Lumia, Z. Farooqui, IEIIT-CNR, Italy; A. Menella, M. Bersanelli, Università degli Studi di Milano, Italy; M. Zannoni, M. Gervasi, Università degli Studi di Milano - Bicocca, Italy; G. Addamo, IEIIT-CNR, Italy; P. Battaglia, Università di Trieste, Italy; F. Cavaliere, Università degli Studi di Milano, Italy; G. Morgante, INAF-IASF, Italy; A. Gregorio, Università di Trieste, Italy; A. Zacchei, INAF - Osservatorio Astronomico di Trieste, Italy; R. Tascone, IEIIT-CNR, Italy;
WEDNESDAY, SEPTEMBER 9, 2015, 08:00 - ROOM EINAUDI

SESSION 29 - ICEAA

ELECTROMAGNETIC PROPERTIES OF CARBON NANOMATERIALS: THEORY AND APPLICATIONS
organized by A. Boag, G. Slepyan
Chair: A. Boag, G. Slepyan

08:00-08:20
CLASSICAL AND QUANTUM EFFECTS IN NOBLE METAL AND GRAPHENE PLASMONICS
N.A. Mortensen, Technical University of Denmark, Denmark;

08:20-08:40
ENHANCED ELECTROMAGNETIC PROPERTIES OF ULTRATHIN PYROLYTIC CARBON FILMS IN KA-BAND
S. Maksimenko, P. Kuzhir, K. Batrakov, S. Voronovich, Belarusian State University, Belarus; T. Kaplas, Yu. Svirko, University of Eastern Finland, Finland;

08:40-09:00
ELECTROMAGNETIC CHARACTERIZATION OF GRAPHENE AND GRAPHENE NANORIBBONS VIA AB-INITIO PERMITTIVITY SIMULATIONS
S. Bellucci, INFN, Italy; A. Sindona, Università della Calabria, Italy; D. Mencarelli, L. Pierantoni, Università Politecnica delle Marche, Italy;

09:00-09:20
EDGE STATES AND EDGE CONDITIONS FOR ELECTROMAGNETIC FIELD IN NANOPHOTONICS
A. Boag, A. Natan, Tel-Aviv University, Israel; P. Poulette, Université des Antilles et de la Guyane (UAG), France; G. Slepyan, Tel-Aviv University, Israel;

09:20-09:40
INDIRECT CHARACTERIZATION OF NANO-ANTENNA ARRAYS
Z. Iluz, CST, Germany; A. Boag, Tel Aviv University, Israel;

09:40-10:00
ELECTROMAGNETIC PROPERTIES OF PERIODIC CARBON ARCHITECTURES AT HIGH FREQUENCIES
D. Bychanok, A. Plyushch, G. Gorokhov, V. Skadorov, P. Kuzhir, S. Maksimenko, Research Institute for Nuclear Problems, Belarus; J. Macutkevic, Vilnius University, Lithuania; A. Ortona, L. Ferrari, E. Rezaei, University of Applied Sciences (SUPSI), Switzerland; A. Szczurek, V. Fierro, A. Celzard, UMR Université de Lorraine - CNRS 7198, ENSTIB, France;

10:20-10:40
CALCULATION OF ELONGATED CARBON STRUCTURES WITH DENSITY FUNCTIONAL THEORY AND FAST POISSON SOLVER
M. Zuzovski, A. Boag, G. Slepyan, Tel-Aviv University, Israel; P. Poulette, Université des Antilles, France; A. Natan, Tel-Aviv University, Israel;

10:40-11:00
SYNTHESIS AND ELECTRICAL CHARACTERIZATION OF GRAPHENE NANOPLATELETS
A. Maffucci, University of Cassino and Southern Lazio, Italy; F. Micciulla, INFN, Italy; A. Cataldo, University of Palermo, Italy; G. Miano, University of Naples “Federico II”, Italy; S. Bellucci, INFN, Italy;

WEDNESDAY, SEPTEMBER 9, 2015, 11:00 - ROOM EINAUDI

SESSION 30 - IEEE APWC

MIMO SYSTEMS
Chair: S. Foo, L. Matekovits

11:00-11:20
ORTHOGONAL BEAM-SPACE MASSIVE MIMO ARRAY
S. Foo, Huawei Technologies Canada, Canada;

11:20-11:40
OUTAGE PROBABILITY OF BEAMFORMING FOR MULTIUSER MIMO RELAY NETWORKS WITH INTERFERENCE
S. Zhou, G. Alfano, C.F. Chiasserini, Politecnico di Torino, Italy; A. Nordio, CNR-IEIIT, Italy;

11:40-12:00
ANALYSIS AND DESIGN OF MICROSTRIP ARRAY ANTENNA USING SPDT-T/R SWITCH FOR MIMO ANTENNA SYSTEM APPLICATIONS
Y. M. Madany, H. M. Elkamchouchi, A. E. Ahmed, Alexandria University, Egypt;

12:00-12:20
ERGODIC MUTUAL INFORMATION AND ITS FLUCTUATION IN MULTI-LEVEL MIMO RELAY SYSTEM
G. Alfano, C.F. Chiasserini, Politecnico di Torino, Italy; A. Nordio, CNR-IEIIT, Italy; S. Zhou, Politecnico di Torino, Italy;

WEDNESDAY, SEPTEMBER 9, 2015, 13:40 - ROOM EINAUDI

SESSION 31 - IEEE APWC

ACTIVE AND ADAPTIVE ANTENNAS
Chair: M. Johnson, M. Joler

13:40-14:00
WEARABLE ACTIVE SIERPINSKI FRACTAL ANTENNA FOR OFF-BODY COMMUNICATION
A. Baroni, University of Pisa, Italy; H. Rogier, University of Ghent, Belgium; P. Nepa, University of Pisa, Italy;

14:00-14:20
AN EXTREMUM-SEEKING CONTROLLER FOR DYNAMIC METAMATERIAL ANTENNA OPERATION
M.C. Johnson, Kymeta Corporation, WA, United States; S.L. Brunton, University of Washington, WA, United States; N.B. Kundtz, Kymeta Corporation, WA, United States; J.N. Kutz, University of Washington, WA, United States;

14:20-14:40
A MATLAB ALGORITHM FOR EVALUATION OF A RECTANGULAR MICROSTRIP ANTENNA SLOT DIMENSIONS GIVEN THE RESONANT FREQUENCY
M. Joler, D. Hodanic, G. Segon, University of Rijeka, Croatia;

14:40-15:00
PERFORMANCE ENHANCEMENT OF A SLOTTED WAVEGUIDE ANTENNA BY UTILIZING PARASITIC ELEMENTS
S. I. Alhuwaimel, KACST/UCL, United Kingdom; K.-F. Tong, University College London, United Kingdom;
15:00-15:20
RECONFIGURABLE RADIATION PATTERN ANTENNA BASED ON A NEW ACTIVE FREQUENCY SELECTION SURFACE
M. Bouslama, M. Trai, A. Gharsallah, Faculty of science of Tunis, Tunisia; T. A. Denidni, Institut national de la recherche scientifique Centre Énergie Matériaux Télécommunications Montreal, Canada;

15:20-15:40
COMPACT FREQUENCY RECONFIGURABLE ANTENNA STRUCTURE FOR LAPTOPS
A. Singh, Ethertronics, CA, United States; O. Pajona, Ethertronics, France; S. Rowson, J. Shamblin, M. Garg, Ethertronics, CA, United States; S. T. Sron, J. Kylloinen, Ethertronics, France;

WEDNESDAY, SEPTEMBER 9, 2015, 08:00 - ROOM GIOLITTI

SESSION 32 - ICEAA
FAST SOLVERS AND STABLE DISCRETIZATIONS
organized by F.P. Andriulli
Chair: F.P. Andriulli, K. Cools

08:00-08:20
HANDLING THE LOW-FREQUENCY BREAKDOWN OF THE PMCHWT INTEGRAL EQUATION WITH THE QUASI-HELMHOLTZ PROJECTORS
Y. Beghein, Ghent University, Belgium; R. Mitharwal, Telecom Bretagne / Institut Mines-Telecom, France; K. Cools, University of Nottingham, United Kingdom; F. P. Andriulli, Telecom Bretagne / Institut Mines-Telecom, France;

08:20-08:40
COUPLING OF UNSTRUCTURED TLM AND BEM FOR ACCURATE 2D ELECTROMAGNETIC SIMULATION
D. Simmons, K. Cools, P. Sewell, University of Nottingham, United Kingdom;

08:40-09:00
COMPARISON OF THE SYMMETRICAL CONDENSED-TLM NODE WITH HYBRID AND SUPER CONDENSED NODES FOR TIME-DOMAIN FIELD COMPUTATION IN COMPLEX MEDIA
M. Ney, A. Ijjeh, Lab-STICC/Telecom Bretagne Institute, France;

09:00-09:20
FAST PARALLEL IMPLEMENTATION FOR ELECTROMAGNETIC MODELING OF SCATTERING FROM FOREST ENVIRONMENT
M. Fall, I. Fenni, H. Roussel, Sorbonne Universités UPMC, France; R. Mittra, Penn State and Central Florida Universities, United States;

09:20-09:40
A ROBUST AND LOW FREQUENCY STABLE TIME DOMAIN PMCHWT EQUATION
Y. Beghein, Ghent University, Belgium; K. Cools, University of Nottingham, United Kingdom; F. P. Andriulli, Telecom Bretagne / Institut Mines-Telecom, France;

09:40-10:00
STABILIZATION OF THE MODELLING OF A RADIO-FREQUENCY QUADRUPOLE BASED ON QUASI-HELMHOLTZ PROJECTORS
C. Raucy, ICTEAM - UCL, Belgium; F. P. Andriulli, Telecom Bretagne, France; C. Craeye, ICTEAM - UCL, Belgium;

10:20-10:40
BROADBAND MLFMA BASED ON AN APPROXIMATE DIAGONALIZATION OF THE THREE-DIMENSIONAL GREEN’S FUNCTION
O. Ergul, B. Karaosmanoglu, Middle East Technical University, Turkey;

10:40-11:00
BOUNDARY ELEMENT METHODS FOR THE SCATTERING RETRIEVAL OF METAMATERIALS
D. M. Solís, University of Vigo, Spain; J. M. Taboada, University of Extremadura, Spain; F. Obelleiro, University of Vigo, Spain; L. Landesa, University of Extremadura, Spain; M. G. Araújo, J. O. Rubiños, J. L. Rodríguez, University of Vigo, Spain;

11:00-11:20
WELL-CONDITIONED SADDLE POINT DESCRIPTION FOR SCATTERING BY A METALLIC JUNCTION
K. Cools, University of Nottingham, United Kingdom; F. P. Andriulli, TELECOM Bretagne, France;

11:20-11:40
FAST GENERATION OF MACRO BASIS FUNCTIONS FOR LEGO THROUGH THE ADAPTIVE CROSS APPROXIMATION
V. Lancellotti, Eindhoven University of Technology, Netherlands;

WEDNESDAY, SEPTEMBER 9, 2015, 11:40 - ROOM GIOLITTI

SESSION 33 - ICEAA
ELECTROMAGNETIC FIELDS IN BIOMEDICAL IMAGING AND THERAPEUTICS: METHODOLOGIES AND APPLICATIONS (MIMED AND EMF-MED)
organized by G. Ruvio, R. Solimene, F. Vipiana
Chair: G. Ruvio, R. Solimene, F. Vipiana

11:40-12:00
HYPERTHERMIA AND THE NEED TO MONITOR TEMPERATURE
G. C. van Rhoon, M. M. Paulides, T. Drizdal, M. Franckena, Erasmus MC Cancer Institute, Netherlands;

12:00-12:20
THE USE OF CT TO IMPROVE THE KNOWLEDGE OF THE PHYSICAL PHENOMENA ASSOCIATED WITH MICROWAVE THERMAL ABLATION PROCEDURES
L. Farina, Sapienza University of Rome, Italy; V. Lopresto, R. Pinto, ENEA, Italy; D. D’Alessio, S. Minosse, L. Strigari, Regina Elena National Cancer Institute, Italy; M. Cavagnaro, Sapienza University of Rome, Italy;

13:40-14:00
BREAST MICROWAVE IMAGING WITH MONOSTATIC AND MULTISTATIC APPROACHES: NUMERICAL SIMULATIONS WITH MUSIC RECONSTRUCTION
M. Grandi, S. Masetti, F. Pareo, N. Lanconelli, Università di Bologna, Italy;

14:00-14:20
EXPERIMENTAL RESULTS ON THE USE OF THE MUSIC ALGORITHM FOR EARLY BREAST CANCER DETECTION
J. A. Tobon Vasquez, F. Vipiana, G. Dassano, M. R. Casu, M. Vacca, A. Pulimeno, Politecnico di Torino, Italy; R. Solimene, Seconda Università di Napoli, Italy;
14:20-14:40

**ELECTROMAGNETIC WAVES SPATIAL FOCUSING: ISSUES, APPLICATIONS AND COMPARISONS**

D.A.M. Iero, Mediterranea University of Reggio Calabria, Italy; L. Crocco, IREA-CNR, Italy; L. Di Donato, University of Catania, Italy; T. Isernia, Mediterranea University of Reggio Calabria, Italy;

14:40-15:00

**NUMERICAL ASSESSMENT OF BRAIN STROKE FOLLOW-UP VIA DIFFERENTIAL MICROWAVE IMAGING**

M. Bjelogrlic, EPFL, Switzerland; R. Scapaticci, IREA CNR, Italy; J.R. Mosig, EPFL, Switzerland; L. Crocco, IREA CNR, Italy; M. Mattes, EPFL, Switzerland;

15:00-15:20

**RESIDUAL SCEDASTICITY ANALYSIS AND IMPLICATIONS FOR MICROWAVE TOMOGRAPHY ASSESSMENT**

P.M. Meaney, K.D. Paulsen, Dartmouth College, NH, United States;

15:20-15:40

**COMPARING BEAMFORMING AND HOLOGRAPHY IN A HOMOGENEOUS 2-D SCENARIO**

R. Solimene, A. Cuccaro, Seconda Università di Napoli, Italy; G. Ruvio, Dublin Institute of Technology, Ireland;

16:00-16:20

**A WEARABLE APPLICATOR FOR MICROWAVE HYPERTHERMIA OF BREAST CANCER: PERFORMANCE EVALUATION WITH PATIENT-SPECIFIC ANATOMIC MODELS**

S. Curto, Kansas State University, KS, United States; G. Ruvio, M.J. Ammann, Dublin Institute of Technology, Ireland; P. Prakash, Kansas State University, KS, United States;

16:20-16:40

**SPARSE LOCALIZATION OF TUMORS INSIDE AN INHOMOGENEOUS BREAST**

M. Nikolic, J. Dinkic, N. Milosevic, B. Kolundzija, University of Belgrade, Serbia;

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**SESSION 34 - ICEAA**

**ELECTROMAGNETIC MODELING FOR EMC**
organized by F. Canavero
Chair: L.R. Arnaut, F. Canavero

08:00-08:20

**CHARACTERIZATION OF CORRELATED RANDOM CARTESIAN FIELD COMPONENTS IN REVERBERATION CHAMBERS USING COPULAS**

L. R. Arnaut, Queen Mary University of London, United Kingdom;

08:20-08:40

**CRITERION BASED ON RESONANT FREQUENCIES DISTRIBUTIONS FOR REVERBERATION CHAMBER CHARACTERIZATION**

E. Richalot, Université Paris-Est Marne-la-Vallée, France; K. Selemani, ENSEA, France; J.B. Gros, LAUM, France; O. Picon, Université Paris-Est Marne-la-Vallée, France; O. Legrand, Université de Nice-Sophia Antipolis, France; S. Grivet-Talocia, Politecnico di Torino, Italy; F. Mortessagne, Université de Nice-Sophia Antipolis, France;

08:40-09:00

**UNCERTAINTY ASSESSMENT OF A COAXIAL LINE’S CAPACITANCE IN A STOCHASTIC CONTEXT**

A. Kouassi, S. Lalléchère, J.-M. Bourinet, P. Bonnet, M. Fogli, Institut Pascal, France;

09:00-09:20

**MODELING OF DIFFERENT CABLES TYPES AND THEIR COMBINATIONS FOR LIGHTNING AND HIRF EMC STUDIES IN THE FDTD METHOD**

C. Guiffaut, A. Reineix, Institute XLIM, France;

09:20-09:40

**HOMOGENIZATION TECHNIQUE FOR TRANSMISSION LINES BASED ON THE MONOTONICITY PROPERTY**

A. Maffucci, A. Vento, S. Ventre, A. Tamburrino, University of Cassino and Southern Lazio, Italy;

09:40-10:00

**EFFICIENT FULL-WAVE MODELING OF ELECTROMAGNETIC INTERFERENCE IN THE PRESENCE OF MULTIPLE NON-COLLOCATED NOISE SOURCES**

G.-J. Stockman, H. Rogier, D. Vande Ginste, Ghent University, Belgium;

10:20-10:40

**MODELING OF MUTUAL COUPLING BETWEEN COAXIAL PROBES IN FLAT METALLIC CASINGS USING THE CONTOUR INTEGRAL METHOD**

Q. Wu, Beihang University, China; A. Vogt, J. Preibisch, A. Hardock, H.D. Brüns, C. Schuster, Technische Universität Hamburg-Harburg, Germany;

10:40-11:00

**CHARACTERIZATION AND MODELING OF INTERFERENCE PROPAGATION MECHANISMS IN INHOMOGENEOUS MULTILAYERED SUBSTRATES**

M. Grau Novellas, R. Serra, Eindhoven University of Technology, Netherlands; M. Rose, NXP Semiconductors, Netherlands;

11:00-11:20

**SENSITIVITY OF MODE CONVERSION IN GEOMETRICALLY UNBALANCED COUPLED DIFFERENTIAL LINES**

L. Badini, F. Grassi, G. Spadacini, S. A. Pignari, Politecnico di Milano, Italy;

11:20-11:40

**ENHANCED DELAY-RATIONAL GREEN’S METHOD FOR CABLE TIME DOMAIN ANALYSIS**

M. De Lauretis, J. Ekman, Lulea University of Technology, Sweden; G. Antonini, D. Romano, Università degli Studi dell’Aquila, Italy;

12:00-12:20

**ABSORBER DESIGN IN THE FREQUENCY RANGE BETWEEN 1 AND 10 GHZ**

R. Araneo, S. Celozzi, University of Rome Sapienza, Italy;
SESSION 35 - ICEAA
RECENT ADVANCES IN COMPUTATIONAL ELECTROMAGNETICS AND ITS APPLICATION
organized by J.-M. Jin
Chair: D. Jiao, J.-M. Jin

13:40-14:00
RECENT ADVANCES IN TDFIT ALGORITHM AND ITS APPLICATIONS
T. J. Cui, J. W. You, Southeast University, China;

14:00-14:20
AN ANALYSIS OF ENERGY CONSERVED SPLITTING FDTD METHOD FOR 2-D MAXWELL’S EQUATIONS
L. Zhao, W. Li, Jiangsu Normal University, China; W. Yu, 2COMU, Armenia;

14:20-14:40
FAST ITERATIVE SOLVER FOR SCATTERING FROM MULTIPLE BODIES OF REVOLUTION
Y. Li, J. Hu, Z. Nie, University of Electronic Science and Technology of China, China;

14:40-15:00
RECENT ADVANCES IN MULTISCALE SIMULATIONS: NESTED EQUIVALENT SOURCE APPROXIMATION AND EQUIVALENCE PRINCIPLE ALGORITHM WITH BODY OF REVOLUTION EQUIVALENCE SURFACE
M. Li, Z. H. Fan, D. Z. Ding, R. S. Chen, Nanjing University of Science and Technology, China; M. A. Francavilla, ISMB, Italy; G. Vecchi, Politecnico di Torino, Italy;

15:00-15:20
FOURIER BASED 3D ISAR NEAR-FIELD IMAGING AND RADAR CROSS SECTION TRANSFORMATION
O. Neitz, T. F. Eibert, TU München, Germany;

15:20-15:40
MRI INDUCED HEATING FOR FULLY IMPLANTED, PARTIALLY IMPLANTED AND MINIMALLY IMPLANTED MEDICAL ELECTRODE LEADS
Q. Zeng, Q. Wang, J. Zheng, J. Chen, University of Houston, TX, United States;

16:00-16:20
OPTIMAL-COMPLEXITY DIRECT SOLVER BASED FAST SYNTHESIS OF THE PHYSICAL LAYOUT OF ELECTROMAGNETIC STRUCTURES
B. Zhou, D. Jiao, Purdue University, IN, United States;

16:20-16:40
NONLINEAR FINITE ELEMENT FORMULATION AND ANALYSIS OF HIGH-POWER AIR/DIELECTRIC BREAKDOWN IN TIME DOMAIN
S. Yan, J.-M. Jin, University of Illinois at Urbana-Champaign, IL, United States;

SESSION 36 - ICEAA
RECENT TRENDS IN ELECTROMAGNETIC MODELING
organized by J. M. L. Bernard
Chair: J. M. L. Bernard, P. L. E. Uslenghi

08:00-08:20
ON NOVEL NON-SINGULAR CONTOUR INTEGRALS FOR RADIATION SURFACE INTEGRALS AND NEAR-FIELD PHYSICAL OPTICS
J. M. L. Bernard, CEA-DIF, France;

08:20-08:40
EXACT ELECTROMAGNETIC SCATTERING BY A DOUBLE TRIHEDRAL METAL REFLECTOR WITH A SEMI-INFINITE SLOT
P. L. E. Uslenghi, University of Illinois at Chicago, IL, United States;

08:40-09:00
A CIRCUITAL APPROACH FOR SOLVING THE PROBLEM OF THE TWO WEDGES
V. G. Daniele, Politecnico di Torino, Italy; R. S. Zich, Istituto Superiore Mario Boella, Italy;

09:00-09:20
WIENER-HOPF ANALYSIS OF THE PLANE WAVE DIFFRACTION BY A THIN MATERIAL STRIP: THE CASE OF E POLARIZATION
T. Nagasaka, K. Kobayashi, Chuo University, Japan;

09:20-09:40
RADIATION FROM AN AXIAL ELECTRIC DIPOLE WITH PROLATE SPHEROIDAL METAMATERIAL CLOAK COVER
T. Negishi, D. Erricolo, P. L. E. Uslenghi, University of Illinois at Chicago, IL, United States;

09:40-10:00
HF PROPAGATION IN A COMPLEX MARITIME ENVIRONMENTS FROM AN ASYMPTOTIC APPROACH VALIDATED FROM A BASED-MOM RIGOROUS CODE
C. Bourlier, University of Nantes, France; G. Kubické, DGA/MRIS, France; P. Pouliguen, DGA Information Superiority, France;

10:20-10:40
A PRECISE TECHNIQUE FOR GROUND WAVE RADIATION AND PROPAGATION OVER AN IRREGULAR SURFACE
Y. Beniguel, IEEA, France; M. Darces, M. Hélier, University Pierre et Marie Curie, France; A. Reineix, University of Limoges, France;

10:40-11:00
LOW COMPUTATIONAL COST METHOD FOR SCATTERING OF LARGE CAVITIES BASED ON ACA COMPRESSION OF ITERATIVE PHYSICAL OPTICS
A. Thomet, IETR, France; G. Kubické, DGA Information Superiority, France; C. Bourlier, IETR, France; P. Pouliguen, DGA Office for advanced research and innovation, France;

11:00-11:20
TIME-DOMAIN MODEL OF COMPLEX MEDIA: APPLICATION TO NON-SATURATED AND NON-HOMOGENEOUSLY MAGNETIZED FERRITE MEDIUM
M. Ney, A. Ijjeh, Lab-STICC/Telecom Bretagne Institute, France;
11:20-11:40
PATTERN RECONSTRUCTION FROM PLANAR SPIRAL NEAR-FIELD MEASUREMENTS @ UNISA ANTENNA CHARACTERIZATION LAB
F. D’Agostino, F. Ferrara, C. Gennarelli, R. Guerriero, M. Migliozzi, University of Salerno, Italy;

11:40-12:00
THEORY OF COUPLINGS IN ELECTROMAGNETISM: NOVEL RESULTS AND NUMERICAL REMOVAL OF COUPLINGS
J.M.L. Bernard, CEA-DIF, France; N. Maliejac, CEA-LR, France;

WEDNESDAY, SEPTEMBER 9, 2015, 13:40 - ROOM MOLLINO
SESSION 37 - ICEAA
ENABLING CONTEXT AWARE SCENARIOS
organized by F. Falcone
Chair: F. Falcone, A. Solanas

13:40-14:00
RADIO CHANNEL CHARACTERIZATION OF VEHICLE-TO-INFRASTRUCTURE COMMUNICATIONS AT 60GHZ
L. Azpilicueta, E. Aguirre, F. Falcone, P. Lopez-Iturri, Universidad Publica de Navarra, Spain; A. V. Alejos, Universidad de Vigo, Spain;

14:00-14:20
DENSE WIRELESS SENSOR NETWORK DESIGN FOR THE IMPLEMENTATION OF SMART HEALTH ENVIRONMENTS
F. Casino, URV, Spain; P. Lopez-Iturri, E. Aguirre, L. Azpilicueta, UPNA, Spain; A. Solanas, URV, Spain; F. Falcone, UPNA, Spain;

14:20-14:40
CONTEXT AWARE SCENARIOS IN TRAIN TRANSPORTATION ENVIRONMENTS
L. Azpilicueta, F. Falcone, J. J. Astrain, J. Villadangos, UPNA, Spain; A. Bahillo, I. Salaberria, A. Perallos, I. Angulo, P. Elejoste, Universidad de Deusto, Spain;

14:40-15:00
SIGNAL PROCESSING REQUIREMENTS FOR STEP DETECTION USING WRIST-WORN IMU
L. E. Díez, A. Bahillo, A. D. Masegosa, A. Perallos, Deusto Institute of Technology, Spain; L. Azpilicueta, F. Falcone, J. J. Astrain, J. Villadangos, Universidad Pública de Navarra, Spain;

THURSDAY, SEPTEMBER 10, 2015, 08:00 - ROOM CAUVOUR
SESSION 38 - ICEAA
FIELDS AND WAVES
organized by L. Klinkenbusch, T. Weiland
Chair: L. Klinkenbusch, D. Sjöberg

08:00-08:20
ANALYSIS OF HIGHER ORDER MODES IN LARGE SUPERCONDUCTING RADIO FREQUENCY ACCELERATING STRUCTURES
T. Galek, J. Heller, T. Flisgen, K. Brackebusch, U. van Rienen, University of Rostock, Germany;

08:20-08:40
ISOGEOOMETRIC ANALYSIS SIMULATION OF TESLA CAVITIES UNDER UNCERTAINTY
J. Corno, Graduate School of Computational Engineering, Germany; C. de Falco, Politecnico di Milano, Italy; H. De Gersem, S. Schöps, TU Darmstadt, Germany;

08:40-09:00
PARALLELIZED SHOOTING AND BOUNCING RAYS BASED SCATTERING COMPUTATIONS FOR ARBITRARY MATERIALS
R. Brem, T. F. Eibert, TU München, Germany;

09:00-09:20
DERIVATION OF DIFFRACTION COEFFICIENTS FROM COMPLEX-SOURCE BEAM SOLUTIONS TO CANONICAL PROBLEMS
H. Bruns, L. Klinkenbusch, Kiel University, Germany;

09:20-09:40
PHYSICAL OPTICS NEAR FIELD CALCULATIONS ON ELECTRICALLY LARGE PLATFORMS
B. Motz, A. Langwost, H. Krüger, CST AG, Germany; T. Weiland, TU Darmstadt, Germany;

09:40-10:00
INTEGRATED SCATTERING DISTORTION ANALYSIS OF MULTI-SCATTERERS FOR NAVIGATION SYSTEM SIMULATIONS - EXAMPLE OF WIND TURBINES
G. Greving, W. -D. Biermann, R. Mundt, NAVCOM Consult, Germany;

10:20-10:40
TIME-DOMAIN SIMULATION OF ELECTROMAGNETIC FIELDS BASED ON REDUCED-ORDER MODELS RESIDING IN THE FREQUENCY DOMAIN
R. Baltes, Saarland University, Germany; O. Farle, CST AG, Germany; R. Dyczij-Edlinger, Saarland University, Germany;

10:40-11:00
NUMERICAL SCHEMES FOR HIGH-RESOLUTION DOSIMETRY SIMULATIONS OF AUTOMOTIVE LOW FREQUENCY INDUCTIVE POWER TRANSFER SYSTEMS
C. Cimala, M. Zang, M. Clemens, J. Feng, B. Schmulling, J. Streckert, Bergische Universität Wuppertal, Germany;

11:00-11:20
MULTI-RATE TIME INTEGRATION FOR COUPLED ELECTRICAL AND THERMAL MODELING OF SURGE ARRESTERS
Y. Späck-Leigsnering, E. Gjonaj, H. De Gersem, T. Weiland, M. Gießel, V. Hinrichsen, TU Darmstadt, Germany;

11:20-11:40
TIME DOMAIN CHARACTERIZATION OF CIRCULAR POLARIZATION SELECTIVE STRUCTURES
D. Sjöberg, Lund University, Sweden;

11:40-12:00
ELECTRIC-FIELD ENHANCEMENT IN CYLINDRICAL WAVEGUIDES MODELED BY GENERALIZED TRANSMISSION LINES
W. Mathis, Leibniz Universität Hannover, Germany; R. Mathis, Georg-August-Universität Göttingen, Germany;
12:00-12:20
AN ADJOINT APPROACH FOR UNCERTAINTY QUANTIFICATION OF MAGNETOQUASISTATIC FIELD PROBLEMS
U. Römer, S. Schöps, H. De Gersem, Technische Universität Darmstadt, Germany;

THURSDAY, SEPTEMBER 10, 2015, 13:40 - ROOM CAVOUR

SESSION 39 - ICEAA

MODERN PROBLEMS OF MATHEMATICAL AND COMPUTATIONAL ELECTROMAGNETICS AND THEIR ADVANCED APPLICATIONS organized by G.N. Georgiev, M.N. Georgieva-Grosse
Chair: G.N. Georgiev, M.N. Georgieva-Grosse

13:40-14:00
ON THE L3 NUMBERS AND THEIR APPLICATION IN THE THEORY OF WAVEGUIDES
G.N. Georgiev, University of Veliko Tarnovo “St. St. Cyril and Methodius”, Bulgaria; M.N. Georgieva-Grosse, Consulting and Researcher in Physics and Computer Sciences, Germany;

14:00-14:20
THE TRANSITION RADIATION IN THE ANISOTROPIC MAGNETO DIELECTRIC PLATE IN A WAVEGUIDE AT PASSING OF A CHARGED PARTICLE PERPENDICULAR TO THE WAVEGUIDE AXIS
E.A. Gevorkyan, Moscow State University of Economics, Statistics and Informatics, Russia;

14:20-14:40
RADIATION OF ELECTROMAGNETIC WAVES FROM FILAMENTARY SOURCES IN THE PRESENCE OF GYROTROPIC CYLINDRICAL SCATTERERS
A.V. Kudrin, V.A. Es’kin, University of Nizhny Novgorod, Russia;

14:40-15:00
A FINITE ELEMENT BOUNDARY ELEMENT DOMAIN DECOMPOSITION INVERSE SCATTERING TECHNIQUE
E. Kilic, O. Neitz, T. F. Eibert, TU München, Germany;

15:00-15:20
SAMPLING RATE COMPARISON FOR A SOURCE RECONSTRUCTION PROBLEM WITH NOISE ADDED MEASUREMENT DATA
S.G. Sen, Ataturk University, Turkey;

15:20-15:40
ADVANCES IN THE THEORY OF THE CIRCULAR WAVEGUIDE WITH AN AZIMUTHALLY MAGNETIZED FERRITE TOROID AND A DIELECTRIC CYLINDER
M.N. Georgieva-Grosse, Consulting in Physics and Computer Sciences, Bulgaria; G.N. Georgiev, University of Veliko Tarnovo “St. St. Cyril and Methodius”, Bulgaria;

16:00-16:20
ERROR ANALYSIS FOR THE CONTOUR-FFT BASED GREEN’S FUNCTION EVALUATION
S. Hubert, UCL, Belgium; S.N. Jha, ICOMS Detections, Belgium; C. Craeye, UCL, Belgium;

16:20-16:40
A HYBRID PROJECTIVE METHOD FOR ANALYSIS OF LONGITUDINALLY NON-UNIFORM DIELECTRIC TRANSITION IN CIRCULAR WAVEGUIDE
O.N. Smolnikova, Moscow Aviation Institute, Russia; N.A. Fedotova, S.P. Skobelev, Moscow Institute of Physics and Technology, Russia;

THURSDAY, SEPTEMBER 10, 2015, 08:00 - ROOM EINAUDI

SESSION 40 - IEEE APWC

RADIO ASTRONOMY (INCLUDING SKA)
Chair: A.R. Dunning, D.B. Davidson

08:00-08:20
A BASELINE DESIGN FOR A RADIO INTERFEROMETER
A. Badescu, D. Matei, University Politehnica of Bucharest, Romania;

08:20-08:40
AN ULTRA-WIDEBAND DIELECTRICALLY LOADED QUAD-RIDGED FEED HORN FOR RADIO ASTRONOMY
A. Dunning, M. Bowen, M. Bourne, D. Hayman, S.L. Smith, CSIRO, Australia;

09:00-09:20
ACCURACY IMPROVEMENT OF APPROXIMATE NOISE TEMPERATURE CALCULATIONS OF OFFSET GREGORIAN REFLECTOR SYSTEMS
R. Lehmensiek, EMSS Antennas (Pty) Ltd, South Africa; D.I.L. de Villiers, Stellenbosch University, South Africa;

09:20-09:40
CHARACTERIZATION OF RF SIGNAL COUPLING BETWEEN MEERKAT TELESCOPE STRUCTURES
S Kuja, P.G. Wiid, Stellenbosch University, South Africa;

09:40-10:00
CONICAL QUAD-MODE ANTENNA WITH INTEGRATED TAPERED SLOT ANTENNAS FOR WIDE-FIELD POLARIMETRY
D.S. Prinsloo, P. Meyer, Stellenbosch University, South Africa; R. Maaskant, M.V. Ivashina, Chalmers University of Technology, Sweden;

10:00-10:20
PROPAGATION MODELLING FOR THE SOUTH AFRICAN SKA SITE
T.J. Phiri, D.B. Davidson, P.G. Wiid, Stellenbosch University, South Africa;

THURSDAY, SEPTEMBER 10, 2015, 10:20 - ROOM EINAUDI

SESSION 41 - ICEAA

ANTENNAS
Chair: A. Abramowicz, P. Pirinoli

10:20-10:40
POPULATION-ADAPTIVE SNO FOR ANTENNA OPTIMIZATION
A. Niccolai, C.A. Gonano, F. Grimaccia, M. Mussetta, R.E. Zich, Politecnico di Milano, Italy;
10:40-11:00
IMPLANTABLE 400MHZ PIFA FOR BIO-TELEMETRY SYSTEM
M. Islam, Fiji National University, Fiji; K.P. Esselle, Macquarie University, Australia; L. Matkevits, Politecnico di Torino, Italy;

11:00-11:20
ANTENNA DECOUPLING STRUCTURE FOR A SINGLE-FREQUENCY FULL-DUPLEX PLANAR DIPOLE ARRAY
K. Iwamoto, The University of Tokyo, Japan; M. Heino, K. Haneda, Aalto University, Finland; H. Morikawa, The University of Tokyo, Japan;

11:20-11:40
DEVELOPMENT OF PLANAR ANTENNAS INSENSITIVE TO ANGULAR ALIGNMENT
A. Abramowicz, A. Raniszewski, J. Berlinski, Warsaw University of Technology, Poland;

11:40-12:00
REFLECTARRAY ANTENNAS PRINTED ON CONVEX SURFACES
V.H. Bui, Université Catholique de Louvain, Belgium; P. Pirinoli, M. Beccaria, M. Orefice, Politecnico di Torino, Italy; F. Yang, Tsinghua University, China;

12:00-12:20
RECONFIGURABLE ANTENNAS RADIATIONS USING PLASMA FARADAY CAGE
O.A. Barro, O. Lafond, M. Himdi, IETR UMR CNRS 6164 University of Rennes1, France;

14:40-15:00
ACTUAL CHALLENGES IN ELECTROMAGNETIC SHIELDING
R. Araneo, S. Celozzi, University of Rome Sapienza, Italy;

THURSDAY, SEPTEMBER 10, 2015, 08:00 - ROOM GIOLITTI

SESSION 43 - ICEAA
FAST COMPUTATIONAL METHODS
organized by A. Boag
Chair: F.P. Andriulli, A. Boag

08:00-08:20
SIMULTANEOUSLY IMPROVING THE EFFICIENCY AND COMPRESSION OF THE ADAPTIVE CROSS APPROXIMATION ALGORITHM
A. Heldring, E. Ubeda, J.M. Rius, UPC, Spain;

08:20-08:40
ON THE HIGH FREQUENCY BEHAVIOR AND STABILIZATION OF A PRECONDITIONED AND RESONANCE-FREE FORMULATION
F.P. Andriulli, Telecom Bretagne/Institut Mines-Telecom, France; I. Bogaert, Ghent University, Belgium; K. Cools, University of Nottingham, United Kingdom;

08:40-09:00
ADAPTIVELY COMPUTED LARGE OVERLAPPING FUNCTIONS FOR MOM COMPUTATIONS
F. Canning, Naval Air Warfare Center Weapons Division, CA, United States;

09:00-09:20
ACCELERATING CONVOLUTION QUADRATURE
D. S. Weile, University of Delaware, DE, United States;

09:20-09:40
AN INTEGRAL EQUATION DOMAIN DECOMPOSITION METHOD BASED ON HYBRID SOLVERS FOR MODELING OF ELECTROMAGNETIC RADIATION
R. Zhao, L. Lei, J. Hu, M. Jiang, Z. Nie, University of Electronic Science and Technology of China, China;

09:40-10:00
ANALYSIS OF FINITE ANTENNA ARRAYS IN THE PRESENCE OF ARBITRARY ELECTROMAGNETIC STRUCTURES
D.J. Ludick, D.B. Davidson, Stellenbosch University, South Africa; U. Jakobus, Altair Development S.A. Pty Ltd, South Africa;

10:20-10:40
PARALLEL FETI-DP FOR EFFICIENT EM ANALYSIS OF GENERAL OBJECTS AND ANTENNA ARRAYS
K.D. Zhang, J.-M. Jin, University of Illinois at Urbana-Champaign, United States;

10:40-11:00
ELECTROMAGNETIC ANALYSIS OF LARGE NANOPLASMONIC ASSEMBLIES WITH FAST MULTIPOLE METHODS
D. M. Solís, University of Vigo, Spain; J.M. Taboada, University of Extremadura, Spain; F. Obelleiro, University of Vigo, Spain;
11:00-11:20
**FAST ANALYSIS OF NONLINEAR SCATTERING**
A. Boag Jr., A. Boag, Tel Aviv University, Israel;

11:20-11:40
**EFFICIENT ANALYSIS OF HOMOGENEOUS DIELECTRIC AND PLASMONIC MEDIA WITH INTEGRAL EQUATION MEI (IE-MEI)**
J. M. Rius, G. Planes, E. Ubeda, A. Heldring, Universitat Politècnica de Catalunya - BarcelonaTECH, Spain;

11:40-12:00
**PARAXIAL GAUSSIAN BEAM SHOOTING ALGORITHM FOR 3D PROPAGATION SIMULATION IN BUILT ENVIRONMENTS**
E.A. Fnaiech, C. Letrou, Télécom SudParis, France; A. Ginestet, NOVELTIS, France; G. Beauquet, THALES Air Systems S.A., France;

12:00-12:20
**IN SEARCH OF THE PERFECT ABSORBER AS AN INTERNAL AND EXTERNAL ABC**
M. Kreiczer, R. Kastner, Tel Aviv University, Israel;

THURSDAY, SEPTEMBER 10, 2015, 13:40 - ROOM GIOLITTI

SESSION 44 - ICEAA

**INVERSE PROBLEMS AND NONLINEAR MEDIA**
organized by Y. Shestopalov
Chair: M. Ipatov, Y. Shestopalov

13:40-14:00
**RESONANT STATES IN FORWARD AND INVERSE WAVEGUIDE SCATTERING PROBLEMS**
Y. Shestopalov, University of Gävle, Sweden;

14:00-14:20
**IMAGE RESTORATION OF THE MULTIPLE TARGET ANTENNAS ARRAY RADIATING BY UWB SIGNALS**
A.B. Samokhin, B.A. Lagobsky, Moscow State technical University of Radio Engineering, Electronics and Automation, Russia; A. S. Samokhina, Moscow Institute of Control Sciences, Russia;

14:20-14:40
**NUMERICAL SIMULATION OF A NONUNIFORM DIELECTRIC INCLUSION IN A WAVEGUIDE AIMED AT RECONSTRUCTING ITS PERMITTIVITY**
A.P. Smirnov, E.A. Sheina, Lomonosov Moscow State University, Russia; Y.V. Shestopalov, University of Gävle, Sweden; A.N. Semenov, Lomonosov Moscow State University, Russia;

14:40-15:00
**RECONSTRUCTION OF PERMITTIVITY OF MULTIPLE LAYERS IN FREE SPACE**
P. Tomasek, Tomas Bata University in Zlin, Czech Republic; Y.V. Shestopalov, University of Gävle, Sweden; V. Kresalek, Tomas Bata University in Zlin, Czech Republic;

15:00-15:20
**COMPARISON OF SELECTED EVOLUTIONARY TECHNIQUES USED IN RECONSTRUCTION OF PERMITTIVITY**
P. Tomasek, Tomas Bata University in Zlin, Czech Republic; Y.V. Shestopalov, University of Gävle, Sweden; V. Kresalek, Tomas Bata University in Zlin, Czech Republic;

15:20-15:40
**MAGNETO-IMPEDANCE AND FERRO-MAGNETIC RESONANCE EFFECTS IN THIN AMORPHOUS WIRES AND THEIR APPLICATION IN FUNCTIONAL COMPOSITES MATERIALS AT MICROWAVES**
M. Ipatov, V. Zhukova, J. Gonzalez, A. Zhukov, University of the Basque Country, Spain;

16:00-16:20
**GOUBAU LINE FILLED WITH NONLINEAR MEDIUM: NUMERICAL STUDY OF TM-POLARIZED WAVES**
E.Yu. Smolkin, University of Gävle, Sweden;

16:20-16:40
**CIRCUIT-LEVEL LARGE-SIGNAL MODELING OF MICROWAVE BANDWIDTH PHOTODETECTOR**
M.E. Belkin, A.S. Sigov, MIREA, Russia;

16.40-17:00
**ELECTROMAGNETIC WAVE DIFFRACTION BY A SYSTEM OF NON-INTERSECTING OBSTACLES OF VARIOUS DIMENSIONS**
M. Yu. Medvedik, Yu. G. Smirnov, Penza State University, Russia; E. Yu. Smolkin, University of Gävle, Sweden; A.A. Tsupak, Penza State University, Russia;

THURSDAY, SEPTEMBER 10, 2015, 08:00 - ROOM SELLA

SESSION 45 - ICEAA

**ELECTROMAGNETIC MEASUREMENTS**
Chair: H.-T. Chou, F. D’ Agostino

08:00-08:20
**FAR FIELD RECONSTRUCTION FROM POSITIONING ERRORS AFFECTED PLANE-POLAR MEASUREMENTS: A SVD APPROACH**
F. D’Agostino, F. Ferrara, C. Gennarelli, R. Guerriero, M. Migliozzi, University of Salerno, Italy;

08:20-08:40
**PROPAGATION MEASUREMENTS CAMPAIGN IN ATHENS WITH ALPHASAT AT KA-BAND USING SOFTWARE DEFINED RADIO TECHNOLOGIES**
A.Z. Papafragkakis, N.K. Lyras, C.I. Kourogiorgas, A.D. Panagopoulos, National Technical University of Athens, Greece;

08:40-09:00
**A NEW METHOD OF ON-SITE RADIATED EMISSION MEASUREMENT OF TRAIN BASED ON BLIND SOURCE SEPARATION**
D. Liu, Y. Wen, S. Chen, Q. He, EMC Lab., Beijing Jiaotong University, China;

09:00-09:20
**FREQUENCY AND TIME DOMAIN CALIBRATION FOR LARGE ROGOWSKI COILS**
S.L. Combrink, P.G. Wiid, Stellenbosch University, South Africa;

09:20-09:40
**SUPPRESSION OF MULTIPATH SIGNALS IN THE INDOOR ANTENNA RADIATION MEASUREMENT USING AN EFFECTIVE SIGNAL PROCESS ALGORITHM**
H.-T. Chou, S.-J. Chou, Yuan Ze University, Taiwan;
09:40-10:00
PERMITTIVITY AND AC CONDUCTIVITY OF HYDRATED PHYLLOSILICATE MINERALS
I.F. Dos Anjos, UFPB, Brazil; S.E. Barbin, USP, Brazil;

10:20-10:40
PERSONAL EXPOSITION TO RADIOFREQUENCY ELECTROMAGNETIC RADIATION IN ALBACETE (SPAIN)
A. Nájera, J. González-Rubio, E. Arribas, University of Castilla–La Mancha, Spain;

10:40-11:00
IMPROVED ANTENNA RANGE CHARACTERISATION USING REDUNDANT MEASUREMENTS
D.M.P. Smith, D.B. Davidson, A. Bester, Stellenbosch University, South Africa;

THURSDAY, SEPTEMBER 10, 2015, 11:00 - ROOM SELLA
SESSION 46 - ICEAA
ELECTROMAGNETIC SENSORS, SIGNAL AND IMAGE PROCESSING FOR FEATURE EXTRACTION organized by D. Erricolo, M.C. Wicks
Chair: G.T. Capraro, M.C. Wicks

11:00-11:20
USE OF MIMO RADAR TO ACHIEVE MULTI-BEAM WAVEFORM TUNING FOR SNR ENHANCEMENT
J.W. Garnham, H. Griffiths, University College London, United Kingdom;

11:20-11:40
FAST FEATURE EXTRACTION VIA A MULTI-FREQUENCY QUALITATIVE INVERSE SCATTERING METHOD
H. F. Alqadah, U.S. Naval Research Laboratory, DC, United States;

11:40-12:00
PHYSICAL-MODEL-BASED IMAGE PROCESSING FOR FEATURE AIDED ANALYSIS
J. Smith, E. Best, E. Sum, Wright State University, OH, United States; Y. Guzel, University of Dayton, OH, United States; M.A. Saville, Wright State University, OH, United States; L. Lo Monte, M. Wicks, University of Dayton, OH, United States;

12:00-12:20
A NOVEL ALGORITHM FOR IMPROVED DETECTION AND DISCRIMINATION OF OVER RESOLVED TARGETS
M.C. Wicks, University of Dayton, OH, United States; G.T. Capraro, Capraro Technologies, Inc, NY, United States;

THURSDAY, SEPTEMBER 10, 2015, 13:40 - ROOM SELLA
SESSION 47 - IEEE APWC
CHANNEL MODELING
Chair: T.K. Sarkar, S. Topcu

13:40-14:00
HOW TO ELIMINATE SHADOW FADING IN A CELLULAR WIRELESS SYSTEM
M.N. Abdallah, T.K. Sarkar, Syracuse University, NY, United States; M. Salazar-Palma, Universidad Carlos III de Madrid, Spain;

14:00-14:20
NEURAL MODELING OF IN-VEHICLE WIRELESS CHANNELS: WAVE PROPAGATION ALONG THE VEHICLE BODY AT 60 GHZ
M. Kotol, Z. Raida, J. Velim, Brno University of Technology, Czech Republic;

14:20-14:40
NEAR GROUND WAVE PROPAGATION MODELING FOR WIRELESS NETWORK APPLICATIONS
M.H. Bezerra Cardoso, S. Mostarshedi, J.-M. Laheurte, ESYCOM - Université Paris-Est, France; G. Baudoin, ESYCOM - ESIEE, France;

14:40-15:00
SIMPLE ELECTROMAGNETIC MODELING SCENARIOS EMULATING TYPICAL PROPAGATION CHANNELS FOR V2V COMMUNICATIONS.
J. Narrainen, IETR/RENAULT SAS, France; P. Besnier, IETR UMR CNRS 6164, France; M. Gatsinzi Ibambe, RENAULT SAS, France;

15:00-15:20
CLOUD ATTENUATION TIME SERIES SYNTHESIZER FOR EARTH-SPACE LINKS OPERATING AT OPTICAL FREQUENCIES
N.K. Lyras, C.I. Kourogiorgas, A.D. Panagopoulos, National Technical University of Athens, Greece;

15:20-15:40
A NEW APPROACH TO DIFFRACTION MODELLING FOR LINE-OF-SIGHT (LOS) PATHS
S. Topcu, P. Goktas, E. Karasan, A. Altintas, Bilkent University, Turkey;

16:00-16:20
EXPERIMENTAL PARAMETERIZATION OF A DIFFUSE SCATTERING MODEL AT 60 GHZ
J. Pascual-García, M.-T. Martinez-Ingles, J.-M. Molina-Garcia-Pardo, J.-V. Rodríguez, Universidad Politécnica de Cartagena, Spain; V. Degli-Esposti, Università di Bologna, Italy;

16:20-16:40
PHYSICAL-MODEL-BASED IMAGE PROCESSING FOR FEATURE AIDED ANALYSIS
J. Smith, E. Best, E. Sum, Wright State University, OH, United States; Y. Guzel, University of Dayton, OH, United States; M.A. Saville, Wright State University, OH, United States; L. Lo Monte, M. Wicks, University of Dayton, OH, United States;

THURSDAY, SEPTEMBER 10, 2015, 13:40 - ROOM MOLLINO
SESSION 48 - ICEAA
ELECTROMAGNETIC EDUCATION
Chair: F.X. Canning, R.A. Salas

13:40-14:00
MAGNETICALLY COUPLED CIRCUITS: MOVING COILS
A. Delgado, Universidad Nacional de Colombia, Colombia;
14:00-14:20
**ON THE FRESNEL COEFFICIENTS FOR TRANSMISSION INTO A LOSSY MEDIUM**
F.X. Canning, Naval Air Warfare Center Weapons Division, CA, United States;

14:20-14:40
**ELECTROMAGNETIC MODELING BY FINITE ELEMENT ANALYSIS AND EXPERIMENTAL MEASUREMENTS APPLIED TO POWER ELECTRONICS TEACHING**
R.A. Salas, Universidad Carlos III de Madrid, Spain;

14:40-15:00
**MAGNETOCALORIC EFFECT AND MAGNETIC SYSTEMS IN SCIENCE EDUCATION**
S. Orozco, R. T. Hernandez-Lopez, Universidad Autonoma Metropolitana, Mexico; A. Sanchez, Universidad Nacional Autonoma de Mexico, Mexico;

15:00-15:20
**SPATIAL-FREQUENCY EVOLUTION OF RADIO IMPULSES ON THE COLLISIONAL IONOSPHERIC PATH**
N.Kh. Gomidze, M.R. Khajishvili, K.A. Makhradze, I.N. Jabnidze, Batumi Shota Rustaveli State University, Georgia;

FRIDAY, SEPTEMBER 11, 2015, 08:00 - ROOM CAVOUR

**SESSION 49 - ICEAA**

**FINITE METHODS**
organized by M.M. Botha
Chair: M.M. Botha, T. Rylander

08:00-08:20
**ACCURACY ANALYSIS OF THE NONRIGOROUS SECOND-ORDER ABSORBING BOUNDARY CONDITION APPLIED TO LARGE CURVED FINITE ELEMENTS**
S. V. Savic, University of Belgrade, Serbia; B. M. Notaros, Colorado State University, United States; M. M. Ilic, University of Belgrade, Serbia

08:20-08:40
**ANALYSIS OF RADIATION AND SCATTERING PROBLEMS WITH THE USE OF HYBRID TECHNIQUES BASED ON THE DISCRETE GREEN’S FUNCTION FORMULATION OF THE FDTD METHOD**
T.P. Stefanski, S. Orlowski, B. Reichel, Gdansk University of Technology, Poland;

08:40-09:00
**IDEAS ON RECOVERY-BASED A POSTERIORI ERROR ESTIMATION FOR RWG-BASED CURRENTS IN THE METHOD OF MOMENTS**
W.J. Strydom, M.M. Botha, Stellenbosch University, South Africa;

09:00-09:20
**FRACTIONAL-CALCULUS-BASED FDTD METHOD FOR SOLVING PULSE PROPAGATION PROBLEMS**
L. Mescia, P. Bia, Politecnico di Bari, Italy; D. Caratelli, The Antenna Company, Netherlands;
FRIDAY, SEPTEMBER 11, 2015, 08:20 - ROOM EINAUDI

SESSION 51 - IEEE APWC

LOW-PROFILE WIDEBAND ANTENNAS
Chair: C. Pichot, G. Virone

08:20-08:40
UWB INTEGRATED MICROSTRIP PATCH ANTENNA WITH UNSYMMETRICAL OPPOSITE SLOTS
A.S. Elkorany, S.M. Elhalafawy, Menofia University, Egypt; S. Shahid, G.G. Gentili, Politecnico di Milano, Italy;

08:40-09:00
A NOVEL PERIODIC MICROSTRIP LEAKY-WAVE ANTENNA WITH BACKWARD TO FORWARD SCANNING
M.H. Rahmani, École de Technologie Supérieure, Canada; D. Deslandes, Université du Québec à Montréal, Canada;

09:00-09:20
WIDEBAND T-SQUARED PATCH ANTENNA WITH REDUCED CROSS-POLARIZATION
M.A. Tanha, P. V. Brennan, University College London, United Kingdom;

09:20-09:40
DESIGN OF FREQUENCY INDEPENDENT PROFILED DISCONE ANTENNA FOR DETECTING SPECTRAL RIPPLES FROM THE EPOCH OF RECOMBINATION
R. Agaram, N. Udaya Shankar, M. Sathyanarayana Rao, R. Subrahmanyan, Raman Research Institute, India;

09:40-10:00
A NOVEL DUAL-POLARIZED BROADBAND UHF BLADE ANTENNA FOR AVIONIC APPLICATIONS
L. Scorrano, A. Manna, F. Trotta, Elettronica S.p.A., Italy;

FRIDAY, SEPTEMBER 11, 2015, 10:20 - ROOM EINAUDI

SESSION 52 - IEEE APWC

SMALL MOBILE DEVICE ANTENNAS
Chair: O. Tabbabi, G. Virone

10:20-10:40
RECTANGULAR DIELECTRIC RESONATOR ANTENNA WITH SWITCHABLE RADIATION PATTERN
M. Mrnka, Z. Raida, Brno University of Technology, Czech Republic;

10:40-11:00
A SPLIT-RING STRUCTURES LOADED SIW SECTORIAL HORN ANTENNA
L. Gong, K. Y. Chan, R. Ramer, University of New South Wales, Australia;

11:00-11:20
COMPACT AND PRINTED MIMO ANTENNAS FOR 2G/3G AND 4G-LTE MOBILE TABLETS
S. Shoaib, I. Shoaib, Queen Mary University of London, United Kingdom; N. Shoaib, Istituto Nazionale di Ricerca Metrologica, Italy; X. Chen, C. Parini, Queen Mary University of London, United Kingdom;

FRIDAY, SEPTEMBER 11, 2015, 08:20 - ROOM EINAUDI

SESSION 53 - ICEAA

ELECTROMAGNETIC PROPERTIES OF MATERIALS AND METAMATERIALS
Chair: P. J. Burke, S. K. Podilchak

08:20-08:40
ANALYSIS AND MODELING OF EPOXY/MWCNT COMPOSITES
N. Mora, Swiss Federal Institute of Technology-EPFL, Switzerland; P. Savi, M. Giorcelli, Politecnico di Torino, Italy; F. Rachidi, Swiss Federal Institute of Technology-EPFL, Switzerland;

08:40-09:00
SHIELDING EFFECTIVENESS STUDY OF TWO FABRICS WITH MICROWAVE PROPERTIES BEFORE AND AFTER HIGH POWER IRRADIATION
P. Ängskog, KTH - Royal Institute of Technology, Sweden; T. Ödman, Saab Electronic Defence Systems, Sweden; M. Bäckström, B. Vallhagen, Saab Aeronautics, Sweden;

09:00-09:20
ECONOMIC ANECHOIC CHAMBER MATERIALS WITH POLYESTER ACOUSTIC SPONGE MATRIX
N.K. Uluaydin, S.S. Seker, Bogazici University, Turkey; O. Cerezci, Sakarya University, Turkey; A.Y. Citkaya, NETAS Telecommunications Inc., Turkey;

09:20-09:40
HIGH FREQUENCY GIANT MAGNETOIMPEDANCE EFFECT OF SOFT MAGNETIC AMORPHOUS MICROWIRES
A. Zhukov, M. Ipatov, A. Talaat, Basque Country University, Spain; M. Churyukanova, National University of Science and Technology «MISIS», Russia; V. Zhukova, Basque Country University, Spain;

09:40-10:00
ELECTROMAGNETIC COUPLING TO NANO-DEVICES: 2D VS 1D
P. J. Burke, P. H. Q. Pham, UCI, CA, United States;
10:20-10:40
FREE-POSITIONING WIRELESS POWER TRANSFER USING MULTIPLE COUPLING COILS IN A TRANSMITTER
D.-H. Kim, UST & KERI, South Korea; J. Kim, KERI, South Korea; Y.-J. Park, UST & KERI, South Korea;

10:40-11:00
VERIFYING SENSITIVITY OF RFID TAGS MANUFACTURED BY CONDUCTIVE INK PRINTED ON PAPER VERSUS AN RFID TAG MADE OF COPPER ON HARD SUBSTRATE
R. Valmíro, S.E. Barbin, University of São Paulo, Brazil;

FRIDAY, SEPTEMBER 11, 2015, 10:20 - ROOM SELLA
SESSION 55 - ICEAA
INVERSE SCATTERING AND REMOTE SENSING
Chair: A. Brancaccio, P. Savi

10:20-10:40
FREQUENCY ANALYSIS OF FINITE STEEL CYLINDERS AND THEIR COMPARISON TO COMPLEX CYLINDER-LIKE TARGETS USING AN ELECTROMAGNETIC INDUCTION SENSOR
C. Abu Antoun, EPFL, Switzerland; C. Würsch, Interstate University of Applied Sciences NTB, Switzerland; C. Köchli, Y. Perriard, EPFL, Switzerland;

10:40-11:00
SOIL MOISTURE RETRIEVAL FROM GNSS-R SIGNALS
Y. Jia, Y. Pei, P. Savi, R. Notarpietro, Politecnico di Torino, Italy;

11:00-11:20
AN ALGORITHM FOR MINE DETECTION AND LOCALIZATION BY SINGLE FREQUENCY NEAR FIELD MEASUREMENTS
A. Brancaccio, A. Del Vecchio, G. Maiello, Seconda Università di Napoli, Italy;

11:20-11:40
ESTIMATION OF WATER PHYSICAL PROPERTIES FROM SAR IMAGES USING SPM MODEL
M. A. Shareef, A. Toumi, A. Khenchaf, ENSTA Bretagne, France;
In the adaptive beamforming methodology used in the signal processing community, typically the adaptive weights are connected to each one of the antenna elements in the array and the processing information is generated over time, as the correlation matrix of the data needs to be formed. In the electromagnetic community however, the procedure is to carry out beam forming. However, in a system implementation, the practical requirements are quite different for these two disjoint theoretical philosophies, as in a real system the objective is to extract the signal of interest out of interferers, clutter, jammers and on. What makes the problem interesting and the classical solution methodologies not relevant in practice, as illustrated by the non-existence of a real system after fifty years of the discovery of the adaptive methodologies, is because it is not only necessary to cancel the interferers and extract the signal of interest when they are located by less than a beam width of the array, but also, the direction of the arrival of the interferers are not known a priori as it is a part of the solution process itself and therefore beam forming has little use! In addition there can be blinking jammers which make a temporal implementation of the adaptive methodology not meaningful.

It is important to note that an antenna is a temporal filter as one can perform temporal filtering as is usually done in the signal processing community but it is also a spatial filter which is the methodology pursued in the antenna community. However, these two diverse properties are interrelated and that is why one solves Maxwell equations as these two properties are related exactly through the Maxwell equations. Understanding of this basic principle of antenna engineering can make it possible to address problems which are difficult to solve using exclusively only any one of these classical methodologies. Thus one can apply directive elements in a phased array placed at non planar and nonuniformly spaced locations to perform electronic scanning. Experimental results will be presented for a real airborne STAP system to illustrate the accuracy of this methodology.

The objective of this short course is also to illustrate that the same antenna array can be used to estimate signals coming from two different directions at two different frequencies using the same antenna elements in the array. This process can be carried out in the presence of both coherent and incoherent interferers also arriving at different frequencies from different directions and impinging on the same antenna array. This new methodology can not only address the case of using directive antennas as elements but it can operate in the presence of other electromagnetic artifacts which can distort their functional properties, for example presence of an imperfect ground and in the presence of blinking jammers.

Copies of presentation slides will be provided.