ICEAA - IEEE APWC
COMMITTEES

STEERING COMMITTEE

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President of the Torino Wireless Foundation

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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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Fabien Ferrero, Univ. Nice Sophia Antipolis, CNRS, France

Secretariat/Treasurer/administration:

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

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Ladislau Matekovits, Politecnico di Torino, Italy

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SCIENTIFIC COMMITTEE

P. L. E. Uslenghi, USA, Chair;

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M. Salazar-Palma, Spain;

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R. Tascone, Italy;

Y. Wen, China;

W. Wiesbeck, Germany;

D. R. Wilton, USA.
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 ICE-AA, 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)
Via Medici, 23 - 10143 Torino
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.

**CONFERENCE SCHEDULE**

*PLEASE CHECK THE DETAILED PROGRAM IN THE FOLLOWING PAGES*

### MONDAY, SEPTEMBER 7, 2015

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<tr>
<td><strong>SESSION 01</strong> ICEAA</td>
<td><strong>SESSION 04</strong> ICEAA</td>
<td><strong>SESSION 08</strong> IEEE APWC</td>
<td><strong>SESSION 09</strong> IEEE APWC</td>
<td><strong>SESSION 11</strong> ICEAA</td>
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<tr>
<td>MATHEMATICAL ADVANCES IN ELECTROMAGNETICS organized by J.M. Arnold, P.D. Smith Chair: J.M. Arnold, P.D. Smith</td>
<td>NETWORK METHODS IN EM MODELING organized by P. Russer Chair: P. Russer, S. Wane</td>
<td>MULTIBAND/WIDEBAND ANTENNAS AND EMERGING ANTENNA TECHNOLOGIES organized by H. Nakano Chair: H. Nakano, C. Phongcharoen-panich</td>
<td>ANTENNAS AND ELECTROMAGNETIC DEVICES INSPIRED BY ELECTROMAGNETIC BAND GAP organized by K.P. Esselle, L. Matekovits Chair: K.P. Esselle, L. Matekovits</td>
<td>INVERSE SCATTERING METHODS IN ELECTROMAGNETIC IMAGING organized by M. Pastorino Chair: M. Pastorino, C. Pichot</td>
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<td><strong>SESSION 14</strong> IEEE APWC</td>
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<td>Coffee break 10:00-10:20</td>
<td>Lunch break 12:20-13:40</td>
<td>Coffee break 15:40-16:00</td>
<td>Coffee break 10:00-10:20</td>
<td>Coffee break 15:40-16:00</td>
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<td>08:00-11:00</td>
<td>SESSION 14 ICEAA</td>
<td>ELECTROMAGNETIC APPLICATIONS TO BIOMEDICINE</td>
<td>Chair: A.O. AlAmoudi, R. Ramer</td>
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<td>11:00-12:20</td>
<td>SESSION 15 ICEAA</td>
<td>ELECTROMAGNETIC APPLICATIONS FOR ENVIRONMENTAL MONITORING</td>
<td>organized by G. Perona</td>
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<td>13:40-15:20</td>
<td>SESSION 16 ICEAA</td>
<td>THEORY AND PRACTICE FOR OPTIMAL ANTENNAS</td>
<td>organized by M. Gustafsson, L. Jonsson</td>
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<td>16:00-17:40</td>
<td>SESSION 17 ICEAA</td>
<td>ADVANCES IN PLASMA-BASED ANTENNAS AND DEVICES</td>
<td>organized by T. Anderson, V. Lancelotti, D. Melazzi</td>
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Coffee break 10:00-10:20 - Lunch break 12:20-13:40 - Coffee break 15:40-16:00

**TUESDAY, SEPTEMBER 8, 2015**

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<tr>
<td>08:20-10:00</td>
<td>SESSION 18 ICEAA</td>
<td>ELECTROMAGNETIC FIELD IDENTIFICATION AND SENSING: TOWARD INTELLIGENT AND ENERGY AUTONOMOUS ADVANCED WIRELESS SYSTEMS</td>
<td>organized by T. Björninen, L. Ukkonen</td>
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<tr>
<td>08:20-12:20</td>
<td>SESSION 21 ICEAA</td>
<td>TRANSIENT METHODS IN COMPUTATIONAL ELECTROMAGNETISM</td>
<td>organized by D.S. Weile</td>
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<tr>
<td>10:00-10:20</td>
<td>SESSION 23 IEEE APWC</td>
<td>ANTENNAS AND ARRAYS</td>
<td>Chair: D.I. de Villiers, P.G. Wild</td>
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<tr>
<td>12:20-13:40</td>
<td>SESSION 26 ICEAA</td>
<td>ELECTROMAGNETIC MODELING OF DEVICES AND CIRCUITS</td>
<td>Chair: A. Abramowicz, I. Triandaf</td>
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<td>13:40-15:20</td>
<td>SESSION 24 ICEAA</td>
<td>FUNCTIONAL MATERIALS FOR ELECTROMAGNETIC APPLICATIONS</td>
<td>organized by L. Matekovits, I. Peter</td>
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<td>16:00-17:20</td>
<td>SESSION 25 IEEE APWC</td>
<td>WIRELESS AND MOBILE NETWORKS</td>
<td>Chair: B.P. de Hon, M. Moghaddam</td>
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<td>13:40-17:40</td>
<td>SESSION 27/A ICEAA</td>
<td>ARRAY SYSTEMS FOR RADIO ASTRONOMY AND SPACE APPLICATIONS: DESIGN, MEASUREMENT AND CALIBRATION</td>
<td>organized by E. de Lera Acedo, G. Virone</td>
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<tr>
<td>15:40-16:40</td>
<td>SESSION 28 ICEAA</td>
<td>ANTENNA-FEED CHAINS AND FRONT-ENDS FOR SPACE AND GROUND APPLICATIONS</td>
<td>organized by G. Addamo, O. Peverini</td>
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BANQUET 20:00 - BUSES DEPART AT 18:15

**WEDNESDAY, SEPTEMBER 9, 2015**

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<tr>
<td>08:00-12:20</td>
<td>SESSION 27/B ICEAA</td>
<td>ARRAY SYSTEMS FOR RADIO ASTRONOMY AND SPACE APPLICATIONS: DESIGN, MEASUREMENT AND CALIBRATION</td>
<td>organized by E. de Lera Acedo, G. Virone</td>
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<tr>
<td>10:00-11:00</td>
<td>SESSION 29 ICEAA</td>
<td>ELECTROMAGNETIC PROPERTIES OF CARBON NANOMATERIALS: THEORY AND APPLICATIONS</td>
<td>organized by A. Boag, G. Slepyan</td>
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<tr>
<td>11:00-12:20</td>
<td>SESSION 30 IEEE APWC</td>
<td>MIMO SYSTEMS</td>
<td>Chair: S. Foo, L. Matekovits</td>
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<tr>
<td>11:40-16:40</td>
<td>SESSION 33 ICEAA</td>
<td>ELECTROMAGNETIC FIELDS IN BIOMEDICAL IMAGING AND THERAPEUTICS: METHODOLOGIES AND APPLICATIONS (MIMED AND EMF-MED)</td>
<td>organized by G. Ruivo, R. Solimene, F. Vipiana</td>
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<td>13:40-15:40</td>
<td>SESSION 28 ICEAA</td>
<td>ANTENNA-FEED CHAINS AND FRONT-ENDS FOR SPACE AND GROUND APPLICATIONS</td>
<td>organized by G. Addamo, O. Peverini</td>
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<td>13:40-16:40</td>
<td>SESSION 31 IEEE APWC</td>
<td>ACTIVE AND ADAPTIVE ANTENNAS</td>
<td>Chair: M. Johnson, M. Joler</td>
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Coffee break 10:00-10:20 - Lunch break 12:20-13:40 - Coffee break 15:40-16:00

**SESSION 36 ICEAA** | ELECTROMAGNETIC FIELD IDENTIFICATION AND SENSING: TOWARD INTELLIGENT AND ENERGY AUTONOMOUS ADVANCED WIRELESS SYSTEMS | organized by G. Perona |
| 13:40-15:00 | SESSION 35 ICEAA | RECENT ADVANCES IN COMPUTATIONAL ELECTROMAGNETICS AND ITS APPLICATIONS | organized by J.-M. Jin |
| 13:40-16:40 | SESSION 37 ICEAA | ENABLING CONTEXT AWARE SCENARIOS | organized by F. Falcone |

**SESSION 38 ICEAA** | ENABLING CONTEXT AWARE SCENARIOS | organized by F. Falcone, A. Solanas
### Thursday, September 10, 2015

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<th>Speaker(s)</th>
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<tr>
<td>Cavour</td>
<td><strong>Session 38</strong> ICEAA Fields and Waves organized by L. Klinkenbusch, T. Weiland</td>
<td>08:00-12:20</td>
<td>L. Klinkenbusch, T. Weiland</td>
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<td>Einaudi</td>
<td><strong>Session 40</strong> IEEE APWC Radio Astronomy (Including SKA) organized by T. Weiland</td>
<td>08:00-10:00</td>
<td>T. Weiland</td>
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<td>Giolitti</td>
<td><strong>Session 43</strong> ICEAA Fast Computational Methods organized by M.M. Botha</td>
<td>08:00-12:20</td>
<td>M.M. Botha</td>
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<tr>
<td>Sella</td>
<td><strong>Session 45</strong> ICEAA Electromagnetic Measurements organized by A. Boag</td>
<td>08:00-11:00</td>
<td>A. Boag</td>
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<tr>
<td>Mollino</td>
<td><strong>Session 47</strong> IEEE APWC Electromagnetic Properties of Materials and Metamaterials organized by S. Celozzi</td>
<td>08:00-10:00</td>
<td>S. Celozzi</td>
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<td><strong>Session 41</strong> ICEAA Antennas organized by A. Abramowicz, P. Pirinoli</td>
<td>10:20-12:20</td>
<td>A. Abramowicz, P. Pirinoli</td>
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<td><strong>Session 42</strong> ICEAA Electromagnetic Shielding organized by S. Celozzi</td>
<td>13:40-15:00</td>
<td>S. Celozzi</td>
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<td><strong>Session 44</strong> ICEAA Inverse Problems and Nonlinear Media organized by Y. Shestopalov</td>
<td>13:40-17:00</td>
<td>Y. Shestopalov</td>
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<td><strong>Session 46</strong> ICEAA Electromagnetic Sensors, Signal and Image Processing for Feature Extraction organized by D. Erricolo, M. Wicks</td>
<td>13:40-17:00</td>
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<td><strong>Session 47</strong> IEEE APWC Channel Modeling organized by T.K. Sarkar, S. Topcu</td>
<td>13:40-17:00</td>
<td>T.K. Sarkar, S. Topcu</td>
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<td><strong>Session 48</strong> IEEE APWC Electromagnetic Education organized by F.X. Canning, R.A. Salas</td>
<td>13:40-15:00</td>
<td>F.X. Canning, R.A. Salas</td>
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**Coffee Break**: 10:00-10:20

### Friday, September 11, 2015

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<tr>
<td>Cavour</td>
<td><strong>Session 39</strong> ICEAA Modern Problems of Mathematical and Computational Electromagnetics and Their Advanced Applications organized by G.N. Georgiev, M.N. Georgieva-Grosse</td>
<td>08:00-10:00</td>
<td>G.N. Georgiev, M.N. Georgieva-Grosse</td>
</tr>
<tr>
<td>Einaudi</td>
<td><strong>Session 40</strong> IEEE APWC Low-Profile Wide-Band Antennas organized by G. Virone</td>
<td>08:00-10:00</td>
<td>G. Virone</td>
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<tr>
<td>Giolitti</td>
<td><strong>Session 43</strong> ICEAA Finite Methods organized by M.M. Botha, T. Rylander</td>
<td>08:00-12:20</td>
<td>M.M. Botha, T. Rylander</td>
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<tr>
<td>Sella</td>
<td><strong>Session 45</strong> ICEAA Electromagnetic Properties of Materials and Metamaterials organized by S. Celozzi, G. Virone</td>
<td>08:00-10:00</td>
<td>S. Celozzi, G. Virone</td>
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<td><strong>Session 41</strong> ICEAA Finite Methods organized by A. Abramowicz, P. Pirinoli</td>
<td>10:20-12:20</td>
<td>A. Abramowicz, P. Pirinoli</td>
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<td></td>
<td><strong>Session 42</strong> ICEAA Electromagnetic Shielding organized by S. Celozzi</td>
<td>13:40-17:00</td>
<td>S. Celozzi</td>
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<td><strong>Session 44</strong> ICEAA Inverse Problems and Nonlinear Media organized by Y. Shestopalov</td>
<td>13:40-17:00</td>
<td>Y. Shestopalov</td>
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<td><strong>Session 46</strong> ICEAA Electromagnetic Sensors, Signal and Image Processing for Feature Extraction organized by D. Erricolo, M. Wicks</td>
<td>13:40-17:00</td>
<td>D. Erricolo, M. Wicks</td>
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<td></td>
<td><strong>Session 47</strong> IEEE APWC Channel Modeling organized by T.K. Sarkar, S. Topcu</td>
<td>13:40-17:00</td>
<td>T.K. Sarkar, S. Topcu</td>
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<td></td>
<td><strong>Session 48</strong> IEEE APWC Electromagnetic Education organized by F.X. Canning, R.A. Salas</td>
<td>13:40-15:00</td>
<td>F.X. Canning, R.A. Salas</td>
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</tbody>
</table>

**Coffee Break**: 10:00-10:20

**Half-Day Short Course**

**Title**: Adaptive Methodologies for Futuristic Phased Array Systems

**Instructor**: Tapan K. Sarkar

Department of Electrical Engineering, Syracuse University, Syracuse; New York 13244-1240, USA.

tksarkar@syr.edu

http://web.syr.edu/~tksarkar
MONDAY, SEPTEMBER 7, 2015, 08:00 - ROOM CAVOUR

SESSION 01 - ICEAA

MATHEMATICAL ADVANCES IN ELECTROMAGNETICS
organized by J.M. Arnold, P.D. Smith
Chair: J.M. Arnold, P.D. Smith

08:00-08:20
ELECTROMAGNETIC SCATTERING BY A METAL SEMI-CIRCULAR CYLINDER LOCATED INSIDE A METALLIC DIHEDRAL CORNER REFLECTOR
B. Albahri, P.L.E. Uslenghi, University of Illinois at Chicago, IL, United States

08:20-08:40
TRANSIENT ELECTROMAGNETIC SCATTERING BY MULTIPLE CAVITIES
A. Wood, R. Uber, Air Force Institute of Technology, OH, United States;

08:40-09:00
ASPECTS OF THE GENERATION OF FINITE-DIFFERENCE GREEN’S FUNCTION SEQUENCES FOR ARBITRARY 3-D CUBIC LATTICE POINTS
B.P. de Hon, Eindhoven University of Technology, Netherlands; J.M. Arnold, University of Glasgow, United Kingdom;

09:00-09:20
QUANTUM OPTICS AND THE DISCRETE-SPACE DISCRETE-TIME JAYNES-CUMMINGS MODEL
J. M. Arnold, University of Glasgow, United Kingdom;

09:20-9:40
A PSEUDO-SPECTRAL LONGITUDINAL EXPANSION IN A SPECTRAL DOMAIN INTEGRAL EQUATION FOR SCATTERING BY PERIODIC DIELECTRIC STRUCTURES
M.C. van Beurden, Eindhoven University of Technology, Netherlands; T. Zacharopoulou, ASML, Netherlands; A. Roc’h, Eindhoven University of Technology, Netherlands; M.G.M.M. van Kraaij, ASML, Netherlands;

09:40-10:00
WIENER-HOPF SOLUTION FOR AN UNALIGNED PEC WEDGE OVER A DIELECTRIC SUBSTRATE
V. Daniele, G. Lombardi, Politecnico di Torino, Italy

10:20-10:40
THE DIFFRACTIVE EFFECT OF ROUNDED CORNERS OF SCATTERING STRUCTURES
P.D. Smith, A.J. Markowskei, Macquarie University, Australia;

10:40-11:00
A RAPIDLY CONVERGENT REGULARIZED APPROACH TO TRANSMISSION LINE PROPERTIES FOR ARBITRARILY CONFIGURED MULTI-CONDUCTOR SYSTEMS
E. Vinogradova, G. Safoño, 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, Evektor 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;
08:40-09:00
MIXED MODELING TECHNIQUE OF MICROSTRIP CHAMFERED BEND STRUCTURES
B.P. Stosic, N.S. Doncov, University of Nis, Serbia;

09:00-09:20
INCORPORATION OF KRAMERS-KRONIG RELATIONSHIPS IN THE DERIVATION OF NETWORK REPRESENTATIONS FOR MODELING AND CHARACTERIZING ANISOTROPIC MATERIALS
D. Bajon, S. Massenot, Université de Toulouse, France; S. Wane, NXP Semiconductor, France;

09:20-09:40
A NETWORK APPROACH TO EM MODELING BASED ON ARRAYS OF COUPLED OSCILLATORS
G. Csaba, University of Notre Dame, United States; J. A. Russer, Technische Universität München, Germany; W. Porod, University of Notre Dame, United States;

09:40-10:00
EFFICIENT SIMULATION OF THIN ANISOTROPIC CONDUCTIVE MATERIALS BY USING DIGITAL FILTER-BASED TLM METHOD
M. Kostic, B. Stosic, N. Doncov, University of Niš, Serbia; J. Paul, Electromagnetics scientist, United Kingdom;

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;
### SESSION 06 - ICEAA

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

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<th>Presenters</th>
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<tr>
<td>13:40-14:00</td>
<td><strong>CHARACTERIZATION OF PHASE IN VECTOR MEASUREMENTS OF STOCHASTIC FIELDS</strong></td>
<td>L. R. Arnaut, Queen Mary University of London, United Kingdom;</td>
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<td>14:00-14:20</td>
<td><strong>NOISE AND VARIATION-AWARE MODELING AND CHARACTERIZATION OF INTEGRATED CIRCUITS USING NETWORK REPRESENTATIONS</strong></td>
<td>S. Wane, NXP Semiconductors France; D. Bajon, Université de Toulouse, France</td>
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<td>14:20-14:40</td>
<td><strong>STOCHASTIC APPROACH FOR POWER INTEGRITY, SIGNAL INTEGRITY AND EMC/EMI ANALYSIS OF MOVING OBJECTS</strong></td>
<td>S. Wane, NXP Semiconductors, France; O. Doussin, D. Bajon, Université de Toulouse, France; J. Russer, P. Russer, TUM Munich, Germany</td>
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<td>14:40-15:00</td>
<td><strong>ANALYSIS OF CYCLOSTATIONARY STOCHASTIC ELECTROMAGNETIC FIELDS</strong></td>
<td>J.A. Russer, P. Russer, Technische Universität München, Germany; M. Konovalyuk, A. Gorbunova, A. Baev, Y. Kuznetsov, Moscow Aviation Institute, Russia;</td>
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<td>15:00-15:20</td>
<td><strong>NEAR-FIELD PROPAGATION OF CYCLOSTATIONARY STOCHASTIC ELECTROMAGNETIC FIELDS</strong></td>
<td>J.A. Russer, P. Russer, Technische Universität München, Germany; M. Konovalyuk, A. Gorbunova, A. Baev, Y. Kuznetsov, Moscow Aviation Institute, Russia;</td>
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### SESSION 07 - ICEAA

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

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<td>16:00-16:20</td>
<td><strong>SUSCEPTIBILITY OF GENERIC IT-NETWORKS</strong></td>
<td>R. Tcheumeleu Tientcheu, SII Deutschland GmbH, Germany; D. Pouhè, Reutlingen University, Germany;</td>
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<td>16:20-16:40</td>
<td><strong>NONLINEAR ALL OPTICAL DIGITAL AMPLIFICATION OF LIGHT PULSES BASED ON COUPLED PHOTONIC CRYSTAL GUIDING NANOSTRUCTURES</strong></td>
<td>V. Jandieri, Roma-Tre University, Italy; R. Komerikhi, Tbilisi State University, Georgia; G. Schettini, Roma-Tre University, Italy; D. Erni, University of Duisburg-Essen, Germany;</td>
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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. Saitoh, 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-IMPEDEANCE 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. Phongcharoenanich, 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;
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;
ENRICHMENT OF EBG CONTENTS OF PERIODIC STRUCTURES
BY GEOMETRY MODULATION
A. De Sabata, Politehnica University Timisoara, Romania;
L. Matekovits, Politecnico di Torino, Italy; O. Lipan, University of
Richmond, United States;
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 (CIMITEC), Spain;
POPULATION-BASED ALGORITHMS APPLIED TO INVERSE
SCATTERING PROBLEM FOR DIELECTRIC COATINGS
G. Labate, P. Pirinoli, L. Matekovits, Politecnico di Torino, Italy;
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;
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;
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,
Polytechnic University of Madrid, Spain;
COMPUTATIONALLY EFFICIENT EXTENSION OF A 2D INTEGRAL
EQUATION PROPAGATION MODEL TO 3D
I. Kavanagh, C. Brennan, Dublin City University, Ireland;
AN EM SCATTERING ALGORITHM FOR ALL MATERIALS
A.D. Seagar, Griffith University, Australia; A.Y. Chantaveerod, Walailak
University, Thailand;
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. Erricolo, 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. Pierrri, 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;

MONDAY, SEPTEMBER 7, 2015, 14:00 - ROOM MOLLINO

SESSION 12 - ICEAA

FREQUENCY SELECTIVE SURFACES
Chair: H. Kaouach, A. Munir

14:00-14:20
DESIGN AND CHARACTERIZATION OF WIDEBAND HIGH-EFFICIENCY UNIT CELLS FOR FREQUENCY SELECTIVE SURFACES IN 10GHZ-BAND
H. Kaouach, F. Ouasli, HF APW Communications, France;

14:20-14:40
SWITCHABLE FREQUENCY SELECTIVE SURFACES REFLECTOR BASED ON GRAPHENE FOR THZ RECEIVER
A. Radwan, V. Verri, M. D’Amico, G.G. Gentili, Politecnico di Milano, Italy;

15:00-15:20
RECONFIGURABLE DUAL BAND FILTER USING NEW FREQUENCY SELECTIVE 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;

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

SESSION 13 - ICEAA

ELECTROMAGNETIC THEORY
Chair: K. Sugahara, R. E. Zich

16:00-16:20
GENERAL STRUCTURE-BASED CLASSIFICATION OF OPTIMIZATION ALGORITHMS FOR AN OBJECTIVE COMPARISON
A. Niccolai, C.A. Gonano, F. Grimaccia, M. Mussetta, R.E. Zich, Politecnico di Milano, Italy;

16:20-16:40
DEVELOPMENT OF THE UWB RADAR SYSTEM WITH ROTATING ANTENNA ARRAY AND TWO IMAGING RECONSTRUCTION ALGORITHMS FOR CONCEALED METALLIC TARGETS IMAGING IN MULTIPATH ENVIRONMENTS
L. Li, X. Chen, C. Parini, University of London, United Kingdom;

16:40-17:00
COMPLEX ANALYSIS AND PARAMETERIZATION OF THE LOSSY TRANSMISSION LINE THEORY AND ITS APPLICATION TO SOLVE RELATED PHYSICAL PROBLEMS
E. Gago-Ribas, P. Vidal-Garcia, University of Oviedo, Spain; J. Heredia-Juesas, Northeastern University, MA, United States;

17:00-17:20
SPATIAL-FREQUENCY EVOLUTION OF RADIO IMPULSES ON THE COLLISIONAL IONOSPHERIC PATH
N.Kh. Gomidze, M.R. Khajishvili, K.A. Makharadze, I.N. Jabnidze, Batumi Shota Rustaveli State University, Georgia;
SESSION 14 - ICEAA

ELECTROMAGNETIC APPLICATIONS TO BIOMEDICINE
Chair: A.O. AlAmoudi, R. Ramer

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. Björninne, 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-IET, Italy; Y. Roth, A. Zangen, Ben-Gurion University of the Negev, Israel; P. Ravazzani, CNR-IET, 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;

10:00-10:20
MILLIMETRE-WAVE NEAR-FIELD PROBE FOR SKIN DEFECTS DETECTION
K.Y. Chan, R. Ramer, The University of New South Wales, Australia;

SESSION 16 - ICEAA

THEORY AND PRACTICE FOR OPTIMAL ANTENNAS
organized by M. Gustafsson, L. Jonsson
Chair: M. Gustafsson, L. Jonsson

13:40-14:00
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;
14:20-14:40
**ANTENNA MODES AND OPTIMAL DESIGN OF ANTENNAS**
X. Zheng, G. A. E. Vandenbosch, V. V. Moshchalkov, KU Leuven, Belgium;

14:40-15:00
**MULTI-ELEMENT APERIODIC ARRAY SYNTHESIS BY COMPRESSIVE SENSING**
C. Bencivieni, M. V. Ivashina, R. Maaskant, Chalmers University of Technology, Sweden;

15:00-15:20
**GENERALIZED METHODOLOGY FOR ANTENNA DESIGN THROUGH OPTIMAL INFINITESIMAL DIPOLE MODEL**
S. Clauzier, S.M. Mikki, Y.M.M Antar, Royal Military College of Canada, Canada;

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**SESSION 17 - ICEAA**

**ADVANCES IN PLASMA-BASED ANTENNAS AND DEVICES**
organized by T. Anderson, V. Lancellotti, D. Melazzi
Chair: D. Melazzi, V. Lancellotti

16:00-16:20
**NUMERICAL RESULTS ON THE PERFORMANCE OF GASEOUS PLASMA ANTENNAS**
D. Melazzi, P. D. Carlo, University of Padova, Italy; M. Manente, T4i S.r.l., Italy; V. Lancellotti, Eindhoven University of Technology, Netherlands; D. Pavarin, University of Padova, Italy;

16:20-16:40
**RECONFIGURABLE LEAKY-WAVE PLASMA ANTENNA: FIRST MEASUREMENTS**
A. Kallel, J. Sokoloff, T. Callegari, Université Paul Sabatier, France;

16:40-17:00
**GASEOUS PLASMA ANTENNA ARRAY FOR GPS: OVERVIEW AND DEVELOPMENT STATUS**
D. Melazzi, P. D. Carlo, University of Padova, Italy; M. Manente, T4i S.r.l., Italy; D. Pavarin, University of Padova, Italy;

17:00-17:20
**FABRY-PEROT-ETALON RESONATOR FOR FASTER OPERATION OF THE SMART PLASMA ANTENNA**
T.R. Anderson, Haleakala Research and Development, Inc, MA, United States;

17:20-17:40
**PARAMETRIC STUDY OF A RECONFIGURABLE PLASMA ANTENNA ARRAY WITH LINEAR EMBEDDING VIA GREEN’S OPERATORS**
A. D. Fernandez-Olvera, Eindhoven University of Technology, Netherlands; D. Melazzi, University of Padova, Italy; V. Lancellotti, Eindhoven University of Technology, Netherlands;

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**SESSION 18 - ICEAA**

**ELECTROMAGNETICS IN WIRELESS IDENTIFICATION AND SENSING: TOWARD INTELLIGENT AND ENERGY AUTONOMOUS ADVANCED WIRELESS SYSTEMS**
organized by T. Björninen, L. Ukkonen
Chair: T. Björninen, L. Ukkonen

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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**SESSION 19 - IEEE APWC**

**INDOOR AND URBAN PROPAGATION**
Chair: P. Gonzalez Castellanos, M. D’Amico

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;
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;

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;

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
TRANSIENT 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;
09:00-09:20
A WELL-CONDITIONED TIME DOMAIN EFIE FOR DENSELY DISCRETIZED LOW FREQUENCY PROBLEMS
Y. Beghein, Ghent University, Belgium; K. Cools, University of Nottingham, United Kingdom; F.P. Andriulli, Telecom Bretagne/Institut Mines-Telecom, France;

09:20-09:40
DISSIPATION FREE LOW ORDER CONVOLUTION QUADRATURE FOR TDBIE
L. Banjai, Heriot-Watt University, United Kingdom;

09:40-10:00
SOURCE DECOMPOSITION AS A GLOBAL ABSORBING BOUNDARY CONDITION FOR MULTI-REGION PROBLEMS
N. Shay, R. Kastner, Tel Aviv University, Israel; D.S. Weile, University of Delaware, United States;

TUESDAY, SEPTEMBER 8, 2015, 10:20 - ROOM GIO LITTI

SESSION 22 - ICEAA

COMPUTATIONAL ELECTROMAGNETICS
organized by R.D. Graglia, D.R. Wilton
Chair: R.D. Graglia, D.R. Wilton

10:20-10:40
RECENT ADVANCES ON DOMAIN DECOMPOSITION FINITE ELEMENT METHODS
M.N. Vouvakis, University of Massachusetts, MA, United States;

10:40-11:00
DOMAIN DECOMPOSITION FOR INTEGRAL EQUATION FORMULATIONS FOR THE ANALYSIS OF COMPLEX OPEN/CLOSED STRUCTURES
M.A. Echeverri Bautista, F. Vipiana, Politecnico di Torino, Italy; M.A. Francavilla, M. Righero, Istituto Superiore Mario Boella, Italy; G. Vecchi, Politecnico di Torino, Italy;

11:00-11:20
ADAPTIVE MODEL ORDER REDUCTION FOR STRUCTURES FED BY DISPERSIVE WAVEGUIDE MODES
R. Baltes, A. Sommer, Saarland University, Germany; O. Farle, CST AG, Germany; R. Dyczij-Edlinger, Saarland University, Germany;

11:20-11:40
IMPROVEMENTS IN THE EVALUATION OF 4-D REACTION INTEGRALS FOR THE METHOD OF MOMENTS
D.R. Wilton, University of Houston, TX, United States; F. Vipiana, Politecnico di Torino, Italy; W. A. Johnson, Consultant, NM, United States;

11:40-12:00
DERIVATION OF RADIAL-ANGULAR SINGULARITY CANCELLATION TRANSFORMATIONS BY THE VARIABLE SEPARATION METHOD
L. Li, T. Eibert, TU München, Germany;

12:00-12:20
TANGENTIAL-NORMAL LINE TESTING FOR A NONCONFORMING DISCRETIZATION OF THE TRANSVERSAL-ELECTRIC ELECTRIC-FIELD INTEGRAL EQUATION FOR 2D CONDUCTORS
I. Sekulic, E. Ubeda, J. M. Rius, Universitat Politècnica de Catalunya, Spain;
A PRINTED ANTI-INTERFERENCE ANTENNA WITH EXCELLENT WIDE TUNABLE AND RECONFIGURABLE MULTIPLE FILTERING BANDS FOR ULTRA-WIDEBAND APPLICATIONS

Y. Li, Harbin Engineering University, China; W. Yu, 2COMU, VA, United States;

17:20-17:40

A PRINTED ANTI-INTERFERENCE ANTENNA WITH EXCELLENT WIDE TUNABLE AND RECONFIGURABLE MULTIPLE FILTERING BANDS FOR ULTRA-WIDEBAND APPLICATIONS

Y. Li, Harbin Engineering University, China; W. Yu, 2COMU, VA, United States;

TUESDAY, SEPTEMBER 8, 2015, 08:20 - ROOM MOLLINO

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 Collodge, 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;

11:00-11:20

THE ANSWER IS IN FACT 41, OR HOW TO GET 35:1 BANDWIDTH FROM A CONE ANTENNA

P.G. Wiid, Stellenbosch University, South Africa;

11:20-11:40

SRR INCORPORATION FOR DUAL-BAND SQUARE PATCH ANTENNA

A. Munir, Institut Teknologi Bandung, Indonesia; M. A. Harfianto, Telkom University, Indonesia; S. Suprayogi, Telkom University, Indonesia;

11:40-12:00

A DETERMINISTIC APPROACH TO THE SYNTHESIS OF SPARSE ARRAYS WITH FAR-FIELD AND NEAR-FIELD CONSTRAINTS

G. Buttazzoni, R. Vescovo, University of Trieste, Italy;

12:00-12:20

PORTING SPOTLIGHT RANGE MIGRATION ALGORITHM PROCESSOR FROM MATLAB TO VIRTEX 6

A. Melnikov, The Hong Kong Polytechnic University, China; J. Le Kernec, Nottingham University, China; D. Gray, Xi’an Jiatong Liverpool University, China;

Tuesday, September 8, 2015, 13:40 - Room Mollino

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. Cluchi, 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;

TUESDAY, SEPTEMBER 8, 2015, 08:00 - ROOM SELLA
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;

09:20-09:40
A DIELECTRICALLY LINED RECTANGULAR WAVEGUIDE AS A WAKEFIELD DECHIRPER FOR ELBE
F. Reimann, U. van Rienen, University of Rostock, Germany; P. Michel, U. Lehnert, Helmholtz-Zentrum Dresden-Rossendorf, Germany;

09:40-10:00
OPTIMIZATION OF ANTENNA ARRAY USING SPACE MAPPING METHOD
J. Xu, S. T. Chen, Z. L. Li, R. S. Chen, Nanjing University of Science and Technology, China;

10:20-10:40
HIGH POWER COMBINER/DIVIDER DESIGN FOR DUAL BAND RF POWER AMPLIFIERS
K. Flattery, Purdue University Fort Wayne, IN, United States; S. Amin, KTH Royal Institute of Technology, Sweden; Y. Mahamat, A. Eroglu, Purdue University Fort Wayne, IN, United States; D. Ronnow, University of Gavle, Sweden;

10:40-11:00
A 3D COMPUTATIONAL MODEL FOR ANALYSIS OF WIRELESS POWER TRANSFER SYSTEM BASED ON THE MAGNETIC RESONANCE COUPLING METHOD
M. Joler, B. Stih, University of Rijeka, Croatia;

11:00-11:20
SELF-RESONANT FREQUENCIES, STANDING WAVES, AND IMPEDANCE BEHAVIOR OF AIR-CORE HELICAL SOLENOIDAL COIL
C.M. de Miranda, S.F. Pichorim, Federal University of Technology – Paraná (UTFPR), Brazil;

11:20-12:00
DESIGN OF CONICAL TRANSMISSION LINE POWER COMBINERS USING SPACE MAPPING
D. I. L. de Villiers, R. D. Beyers, Stellenbosch University, South Africa;

12:00-12:20
ELECTROMAGNETIC MODELING AND ANALYSIS OF RECTIFIER ANTENNAS
H.P. Partal, Syracuse University, NY, United States; A.T. Ince, Radarcomm, Ltd.Sti., Turkey; M.A. Belen, Yildiz Technical University, Turkey; S. Zorlu-Partal, Radarcomm, Ltd.Sti., Turkey; R. Tanski, Syracuse University, United States;
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
GALILEO NAVIGATION ANTENNA
P. Valle, L. Carinci, R. Mizzoni, G. Rosati, R. Capone, F. Poscente, Thales Alenia Space, Italy;

14:20-14:40
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;

14:40-15:00
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;

15:00-15:20
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;

15:20-15:40
EFFICIENCY ENHANCEMENT CONSIDERATION FOR A LOW-FREQUENCY FR-ORA ARRAY
E.O. Farhat, K.Z. Adami, University of Malta, Malta;

16:00-16:20
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;

16:20-16:40
MEASURED SENSITIVITY OF THE FIRST MARK II PHASED ARRAY FEED ON AN ASKAP ANTENNA

16:40-17:00
MULTICOPTER METROLOGY PLATFORM FOR PROPAGATION MEASUREMENTS
H. Plenaar, H.C. Reader, Stellenbosch University, South Africa;
09:00-09:20
THE HYDROGEN EPOCH OF REIONIZATION ARRAY (HERA)
D. DeBoer, University of California, CA, United States;

09:20-09:40
PATH TO A FULL SIZE CRYO-PAF INSTRUMENT CAMERA FOR ARECIBO
G. Cortes-Medellin, University of Antioquia, Colombia; D.B. Campbell, S. Parshley, G. Rajagopalan, Cornell University, NY, United States;

09:40-10:00
EVOLUTION OF SKALA (SKALA-2), THE LOG-PERIODIC ARRAY ANTENNA FOR THE SKA-LOW INSTRUMENT
E. de Lera Acedo, University of Cambridge, United Kingdom; N. Drought, B. Wakley, Cambridge Consultants, United Kingdom; A. Faulkner, University of Cambridge, United Kingdom;

10:20-10:40
VALIDATION OF THE HARP METHOD FOR SIMULATION OF MUTUAL COUPLING BETWEEN SKALA ANTENNAS
Q. Gueuning, Université catholique de Louvain, Belgium; E. Colin-Beltran, University of Cambridge, United Kingdom; C. Craeye, Université catholique de Louvain, Belgium; E. de Lera Acedo, University of Cambridge, United Kingdom;

10:40-11:00
AMPLITUDE WEIGHTING OF IRREGULAR PLANAR ARRAYS: MINIMISING NEAR-IN AND INTERMEDIATE Sidelobes
D.J.K. Buisson, N. Razavi-Ghods, University of Cambridge, United Kingdom;

11:00-11:20
RECENT RESULTS IN ANTENNA PATTERN MEASUREMENT WITH UAVS
F. Paonessa, G. Virone, IEIIT-CNR, Italy; I. Aicardi, A.M. Lingua, M. Piras, P. Maschio, Politecnico di Torino, Italy; P. Bolli, INAF, Italy; G. Addamo, O.A. Peverini; R. Orta, R. Tascone, IEIIT-CNR, Italy;

11:20-11:40
ANTENNA PATTERN CALIBRATION OF RADIO TELESCOPES USING AN UAV BASED DEVICE
A. Martinez Picar, C. Marqué, Royal Observatory of Belgium, Belgium; M. Anciaux, H. Lamy, S. Ranvier, Belgian Institute for Space Aeronomy, Belgium;

11:40-12:00
INTRINSIC CROSS-POLARIZATION RATIO (IXR) FOR ANTENNA ARRAYS AND IMPROVING POLARIMETRY VIA POLARIZATION DIVERSITY
T. Carozzi, Onsala Space Observatory, Sweden;

12:00-12:20
THREE DIMENSIONAL FORMALISM OF THE MEASUREMENT EQUATION FOR WIDE FIELD POLARIMETRIC IMAGING
D.M.P. Smith, A. Young, D.B. Davidson, Stellenbosch University, South Africa;

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. Hélie, 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;
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, 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. Poullet, 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. Poullet, 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;

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;

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 SELECTIVE SURFACE
M. Bouslama, M. Traï, 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. Kyllonen, 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;
14:40-15:00
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 SCAVASTICITY 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, 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;

WEDNESDAY, SEPTEMBER 9, 2015, 08:00 - ROOM SELLA
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;
**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/MI, France; P. Pouliguen, DGA/MRIS, 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. Mallejac, 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, 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, I. Salaberria, 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 CAVOURE

SESSION 38 - ICEAA
FIELDS AND WAVES
organized by L. Klinkenbusch, T. Weiland
Chair: L. Klinkenbusch, T. Weiland

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;

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;

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. Sjoberg, Lund University, Sweden;

11:40-12:00
ELECTRIC-FIELD ENHANCEMENT IN CYLINDRICAL WAVEGUIDES
MODELLLED 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;

08:40-09:00
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;

09:00-09:20
CHARACTERIZATION OF RF SIGNAL COUPLING BETWEEN MEERKAT TELESCOPE STRUCTURES
S Kuja, P. G. Wiid, Stellenbosch University, South Africa;

09:20-09:40
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;

09:40-10:00
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. Matekovits, 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;

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

SESSION 42 - ICEAA
ELECTROMAGNETIC SHIELDING
organized by S. Celozzi
Chair: R. Araneo, S. Celozzi

13:40-14:00
THE ROLE OF ELECTROMAGNETIC SHIELDING IN DEALING WITH THE THREAT OF INTENTIONAL ELECTROMAGNETIC INTERFERENCE (IEMI)
W.A. Radasky, Metatech Corporation, CA, United States;

14:00-14:20
SPHERICAL-MULTIPOLE ANALYSIS OF THE ELECTROMAGNETIC FIELD FOR A STATISTICALLY KNOWN SHIELDING STRUCTURE
L. Klinkenbusch, K. Korber, Kiel University, Germany;

14:20-14:40
SHIELDING EFFECTIVENESS OF CARBON NANOTUBE REINFORCED CONCRETE COMPOSITES BY REVERBERATION CHAMBER MEASUREMENTS
D. Micheli, M. Marchetti, R. Pastore, A. Vricella, University “Sapienza” of Rome, Italy; G. Gradoni, University of Nottingham, United Kingdom; F. Moglie, V. Mariani Primiani, Università Politecnica delle Marche, Italy;

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: A.B. Samokhin, 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, Electronis and Automatics, 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-IMPEDEANCE 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. Papafragakakis, 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 PHYLOSILICATE 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: D. Erricolo, 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. Kourogjorgas, 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
CHARACTERIZATION OF TRANSMISSION SCENARIOS FOR TERAHERTZ INTRA-DEVICE COMMUNICATIONS
A. Fricke, TU Braunschweig, Germany; M. Achir, P. Le Bars, Canon Research Centre, France; T. Kürner, TU Braunschweig, Germany;

16:40-17:00
A NEW METHOD OF DIRECT TIME-DOMAIN SIMULATIONS OF AN UWB TRANSMISSION FOR AN ELECTROMAGNETIC WAVE SOURCE PLACED ON A CONVEX OBSTACLE
P. Górniak, W. Bandurski, Poznan University of Technology, Poland;

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 Warefare 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;

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;

09:20-09:40
FULL VECTORIAL MODE SOLVER FOR DESIGN AND OPTIMIZATION OF MAGNETO-OPTIC DEVICES
P. Pintus, Scuola Superiore Sant’Anna, Italy; D. Huang, S. Srinivasan, J. E. Bowers, University of California Santa Barbara, CA, United States;

09:40-10:00
KRYLOV MODEL-ORDER REDUCTION EXPANSIONS FOR ELECTROMAGNETIC WAVE FIELDS IN STRONGLY RESONATING STRUCTURES
J.T. Zimmerling, R.F. Remis, Delft University of Technology, Netherlands;

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

SESSION 50 - ICEAA

FINITE METHODS
Chair: M.M. Botha, T. Rylander

10:20-10:40
A COMPARISON OF MODE-MATCHING FORMULATIONS FOR THE ANALYSIS OF HIGH-CONTRAST GRATINGS
A. Tibaldi, P. Debernardi, IELIT-CNR, Italy; R. Orta, Politecnico di Torino, Italy;

10:40-11:00
AN EFFICIENT SPECTRAL ELEMENT METHOD FOR THE ANALYSIS OF SEMICONDUCTORS DEVICES
H. G. Bao, D. Z. Ding, Z. H. Fan, R. S. Chen, Nanjing University of Science and Technology, China;

11:00-11:20
FIRST ERROR ANALYSES FOR FINITE ELEMENT SOLUTIONS OF BOUNDARY VALUE PROBLEMS INVOLVING CYLINDERS MOVING IN THE AXIAL DIRECTION
M. Raffetto, P. Kalarickel Ramakrishnan, University of Genoa, Italy;

11:20-11:40
HIGHER-ORDER HYBRID METHOD FOR CURL-CONFORMING ELEMENTS ON TETRAHEDRONS AND BRICKS
J. Winges, T. Rylander, Chalmers University of Technology, Sweden;

11:40-12:00
ANALYSIS OF ELECTROMAGNETIC SCATTERING BY 3-D PLASMA OBJECTS USING SPECTRAL-ELEMENT TIME-DOMAIN METHOD
H. Xu, H. G Bao, Y. J. Sheng, R. S. Chen, Nanjing University of Science and Technology, China;

12:00-12:20
VALIDATION METHOD FOR NUMERICAL SIMULATIONS OF LARGE OBJECTS USING THE T-MATRIX FOR A COLLECTION OF SCATTERERS
T. Martin, Lund University and Saab Aeronautics, Sweden; M. Wallin, Saab Aeronautics, Sweden;

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

SESSION 51 - IEEE APWC

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

08:00-08:20
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;
08:20-08:40
A NOVEL PERIODIC MICROSTRIP LEAKY-WAVE ANTENNA WITH BACKWARD TO FORWARD SCANNING
M.H. Rahmani, École de Technologie Supérieur, Canada; D. Deslandes, Université du Québec à Montréal, Canada;

08:40-09:00
WIDEBAND T-SQUARED PATCH ANTENNA WITH REDUCED CROSS-POLARIZATION
M.A. Tanha, P. V. Brennan, University College London, United Kingdom;

09:00-09:20
INCREASING BANDWIDTH TRIANGULAR MICROSTRIP ANTENNA USING PARASITIC PATCH
I. Surjati, J. Haidi, Trisakti University, Indonesia;

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;

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;

11:20-11:40
MINIATURIZATION OF MEANDER LINE SLOT ANTENNA

11:40-12:00
DESIGN OF ORTHOGONAL Z-SHAPED METAMATERIAL WITH IMPROVED MINIATURIZATION PERFORMANCE
O. Tabbabi, M. Labidi, F. Choubani, Sup’Com University of Carthage, Tunisia; J. David, INP-ENSEEIHT Research Laboratory, France;

12:00-12:20
MINIATURIZED ANTENNA BASED ON Z SHAPE SLOTTED GROUND PLANE
O. Tabbabi, L. Labidi, F. Choubani, Sup’Com University of Carthage, Tunisia; J. David, INP-ENSEEIHT Research Laboratory, France;

FRIDAY, SEPTEMBER 11, 2015, 08:20 - ROOM EINAUDI
SESSION 52 - IEEE APWC
SMALL MOBILE DEVICE ANTENNAS
Chair: O. Tabbabi, G. Virone

10:20-10:40
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;

10:40-11:00
SHIELDING EFFECTIVENESS STUDY OF TWO FABRICS WITH MICROWAVE PROPERTIES BEFORE AND AFTER HIGH POWER IRRADIATION
P. Ångskog, KTH - Royal Institute of Technology, Sweden; T. Ödman, Saab Electronic Defence Systems, Sweden; M. Bäckström, B. Vallhagen, Saab Aeronautics, Sweden;

11:00-11:20
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;

11:20-11:40
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;

12:20-12:40
ELECTROMAGNETIC COUPLING TO NANO-DEVICES: 2D VS 1D
P. J. Burke, P. H. Q. Pham, UCI, CA, United States;
**10:40-11:00**

**SRR BASED TRANSMISSION LINE METAMATERIAL SUPER LENS FOR WIRELESS COMMUNICATION APPLICATIONS.**
A. Boubakri, F. Choubani, INNOVCOM LAB SUPCOM, Tunisia; T.H. Vuong, J. David, Plasma and Energy conversion Lab INPT, France;

**11:00-11:20**

**MINIATURIZATION OF MICROSTRIP PATCH ANTENNA USING METAMATERIAL LOADED WITH SRR**
S. K. Jain, A. Shrivastava, G. Shrivas, SGSITS, Indore (M.P.), India;

**11:20-11:40**

**DESIGN OF A COMPACT TRIPLE-BAND METAMATERIAL ABSORBER WITH WIDE ANGLE OF INCIDENCE USING CONNECTED RESONATOR TOPOLOGY**
A. Sarkhel, National Institute of Technology Meghalaya, India; S.R. Bhadra Chaudhuri, Indian Institute of Engineering Science and Technology, India;

**11:40-12:00**

**MICROWAVE WAVEGUIDE TRANSITIONS USING PLANAR ANISOTROPIC IMAGE GUIDES**
S.K. Podilchak, The Royal Military College of Canada, Canada; J. Shaker, R. Chaharmir, The Communications Research Centre Canada, Canada; Y.M.M. Antar, The Royal Military College of Canada, Canada;

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**FRIDAY, SEPTEMBER 11, 2015, 08:40 - ROOM SELLA**

**SESSION 54 - IEEE APWC**

**RFID TECHNOLOGIES**
Chair: S.E. Barbin, S. López-Soriano

**08:40-09:00**

**WEARABLE RFID TAG ANTENNA FOR HEALTHCARE APPLICATIONS**
J. Parrón, S. López-Soriano, Universitat Autònoma de Barcelona, Spain;

**09:00-09:20**

**EFFECTIVE MAGNETIC RESONANT WIRELESS POWER TRANSFER SYSTEM OVER MEDIUM RANGE USING AN INTERMEDIATE RESONANT COIL OF TWO LOOPS**
J. Kim, Korea Electrotechnology Research Institute (KERI), South Korea; D.-H. Kim, Y.-J. Park, University of Science & Technology (UST) and Korea Electrotechnology Research Institute (KERI), South Korea;

**09:20-09:40**

**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;

**09:40-10:00**

**VERIFYING SENSITIVITY OF RFID TAGS MANUFACTURED BY CONDUCTIVE INK PRINTED ON PAPER VERSUS AN RFID TAG MADE OF COPPER ON HARD SUBSTRATE**
R. Valmiro, S.E. Barbin, University of São Paulo, Brazil;
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 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.