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Dear EuCAP 2011 delegate,

On behalf of the Organizing Committee and of the Management Committee, I’m glad to welcome all participants to the 5th edition of the European Conference on Antennas and Propagation, organized by the European Association on Antennas and Propagation (EuRAAP), which this year is held in Italy, after the previous events in France, UK, Germany and Spain.

Actually, Italy one of the countries where antenna and propagation themes have most been studied since the beginning and have a long history, from the first studies on diffraction by Francesco Maria Grimaldi in the 17th century, to the Marconi’s first experiments on long distance electromagnetic signals transmission in late 19th century, and still today a significant part of the research activity on these subjects in carried out by Italian researchers.

Despite of the international economic situation, the number of papers submitted to EuCAP has significantly increased with respect to the average of the previous years, with more than 1200 summaries (and many of them were already full papers), including the convened sessions, of very high quality: this has made very difficult the selection of the papers, and the Chairpersons involved in the final selection has been forced to keep a tight acceptance rate, for reasons of space. A total of more than 1000 papers, from all over the world, with 102 oral sessions are in this Conference: 42 of these sessions are convened, where the organizers have invited world experts to discuss on emerging methodologies, applications and technologies in the area of antennas and propagation; in addition, to this, three poster sessions with more than 220 papers. And in the Plenary Sessions the keynote speakers will address the present trends of our community in the international scenario.

In few words, the Conference will globally give a wide overview of the most recent advances in the areas of antenna theory, design and measurements, and of radio waves propagation.

A total of 5 prizes will be awarded at the end of the Conference, to give recognition of the highest quality of the papers, covering four different topics (Antenna theory, design, measurements, Propagation) as well as a Student prize reserved to the best paper where the first author is a registered student and presenter.

Let me conclude by thanking all the authors, the members of the Review Committee, the Chairs of the Committee, all those who have contributed to build the Conference program, and all persons or organizations that have supported our work in many ways and have contributed to the success of EuCAP 2011.

We look forward to seeing you in Rome in April.

Mario Orefice
Politecnico di Torino, Italy, Chairman of EuCAP 2011
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**Dr. Jean Chazelas**

After graduation from "Ecole Centrale de Paris", and a PhD in Atomic and Molecular Physics jointly at Pennsylvania State University and Paris VI (UPMC) University, joint Thomson-CSF Corporate Research Laboratories in 1984 as responsible of structural characterization and physics of semiconductor and superconductor devices including advanced optoelectronic devices. From 1999 to 2009, he was also Associate Research Director at CNRS in IEMN (Institute of Electronics, Microelectronics and Nanotechnologies), Lille University and from 2005 to 2009, co-Director of the Thales@NTU Joint Research Laboratory with Nanyang Technological University in Singapore. He is now the Scientific Director in Thales DMS (Defence Mission Systems) Division. He has been involved in numerous European and International projects and contracts in the field of Microwaves, Photonics and Nanotechnologies. He holds more than 200 publications and 40 patents in the field of Semiconductor physics, Spintronics, Photonics, Microwaves and related Nanotechnologies.

**Constantine A. Balanis**

Constantine A. Balanis (S’62 - M’68 - SM’74 - F’86 - LF’04) received the BSEE degree from Virginia Tech, Blacksburg, VA, in 1964, the MEE degree from the University of Virginia, Charlottesville, VA, in 1966, and the Ph.D. degree in Electrical Engineering from Ohio State University, Columbus, OH, in 1969. From 1964 - 1970 he was with NASA Langley Research Center, Hampton VA, and from 1970 - 1983 he was with the Department of Electrical Engineering, West Virginia University, Morgantown, WV. Since 1983 he has been with the School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ, where he is now Regents’ Professor. His research interests are in computational electromagnetics, smart antennas, and multipath propagation. He received in 2004 a Honorary Doctorate from the Aristotle University of Thessaloniki; the 2005 IEEE Antennas and Propagation Society Chen-To Tai Distinguished Educator Award; the 2000 IEEE Millennium Award, the 1996 Graduate Mentor Award, Arizona State University; the 1992 Special Professionalism Award from the IEEE Phoenix Section; the 1989 IEEE Region 6 Individual Achievement Award; and the 1987 - 1988 Graduate Teaching Excellence Award, Arizona State University, Arizona State University. Dr. Balanis is a Life Fellow of the IEEE. He has served as Associate Editor of the IEEE Transactions on Antennas and Propagation (1974 - 1977) and the IEEE Transactions on Geoscience and Remote Sensing (1981 - 1984), as Editor of the Newsletter for the IEEE Geoscience and Remote Sensing Society (1982 - 1983), as Second Vice-President (1984) and member of the Administrative Committee (1984-85) of the IEEE Geoscience and Remote Sensing Society, and as Distinguished Lecturer (2003 - 2005), Chairman of the Distinguished Lecturer Prize (1988 - 1991), member of the AdCom (1992 - 95, 1997 - 1999), and Chair of the Awards and Fellows Committee of the IEEE Antennas and Propagation Society (2009- ). He is the author of Antenna Theory: Analysis and Design (Wiley, 1982, 1997, 2005), Advanced Engineering Electromagnetics (Wiley, 1989) and Introduction to Smart Antennas (Morgan & Claypool, 2007) and editor of Modern Antenna Handbook (Wiley, 2008) and editor for the Morgan & Claypool Publishers on Antennas and Propagation series, and Computational Electromagnetics series.

**Nader Engheta**

Nader Engheta is the H. Nedwill Remsey Professor of Electrical and Systems Engineering, and Professor of Bioengineering, at the University of Pennsylvania. He received his B.S. degree in EE from the University of Tehran, and his M.S. and Ph.D. degrees in EE from Caltech. Selected as one of the Scientific American Magazine 50 Leaders in Science and Technology in 2006 for developing the concept of optical lumped nanocircuits, he is a Guggenheim Fellow, an IEEE Third Millennium Medalist, a Fellow of IEEE, American Physical Society (APS), Optical Society of America (OSA), American Association for the Advancement of Science (AAAS), and SPIE-The International Society for Optical Engineering, and the George H. Heilmeyer Award for Excellence in Research from UPenn, the Fulbright Naples Chair Award, NSF Presidential Young Investigator award, the UPS Foundation Distinguished Educator term Chair, and several teaching awards including the Christian F. and Mary R. Lindback Foundation Award, S. Reid Warren, Jr. Award and W. M. Keck Foundation Award. His current research activities span a broad range of areas including metamaterials and plasmonics, nano-optics and nanophotonics, biologically-inspired sensing and imaging, miniaturized antennas and nano-antennas, physics and reverse-engineering of polarization vision in nature, mathematics of fractional operators, and physics of fields and waves phenomena. He has co-edited (with R. W. Ziolkowski) the book entitled “Metamaterials: Physics and Engineering Explorations” by Wiley-IEEE Press, 2006.

**Per-Simon Kildal**

Professor Per-Simon Kildal, Distinguished Lecturer of IEEE Antennas and Propagation Society. Per-Simon Kildal is professor in antennas at Chalmers University of Technology in Gothenburg, Sweden since 1989. He is heading the Antenna group. His main tasks are to lead and supervise research and education within antenna systems. Until now, 18 graduate students have received a Ph.D. from him. Kildal received two doctoral degrees from the Norwegian Institute of Technology in Trondheim. He is a Fellow of IEEE since 1995, and in 2011 he was awarded the prestigious Distinguished Achievements Award from the IEEE Antennas and Propagation Society. Kildal has authored more than 120 articles in scientific journals; concerning antenna theory, analysis, design and measurements, two of which was awarded best paper awards by IEEE (1985 R.W.P. King Award and 1991 Schelkunoff Prize Paper Award). He is the inventor behind technologies such as dipole with beam forming ring, the hat antenna, and the eleven feed. Kildal was the first to introduce the reverberation chamber as an accurate measurement instrument tool for Over-The-Air (OTA) characterization of small antennas and wireless terminals for use in multipath environments with fading. Kildal is also the originator of the concept of soft and hard surfaces from 1988, today being regarded as the first metamaterials concept. This concept is the basis of his newest and most fundamental invention, the gap waveguide technology. The research is innovative and industrially oriented, and has resulted in several patents and related spinoff companies, the most known being Bluetest AS, see www.kildal.se for more details. Kildal organizes and lectures in courses within the European School of Antenna (ESoA, www.antennasve.org). His text-book Foundations of Antennas - A Unified Approach (Lund, Sweden: Student-litteratur, 2000) was well received, and is now in the process of being revised.
Invited Speakers

Lluis Jofre
Lluis Jofre was born in Canet de Mar, Spain in 1956. He received the M.Sc. (Ing) and Ph.D. (Doctor Ing.) degrees in Electrical Engineering (Telecommunications Eng.), from the Universitat Politecnica de Catalunya (UPC), Barcelona, Spain in 1978 and 1982, respectively. From 1979 to 1980 he was Research Assistant in the Electrophysics Group at UPC, where he worked on the analysis and near field measurement of antenna and scatterers. From 1981 to 1982 he joined the Ecole Superieure d’Electricite, Paris, France, where he was involved in microwave antenna design and imaging techniques for medical and industrial applications. In 1982, he was appointed Associate Professor at the Communications Department of the Telecommunication Engineering School at the UPC, where he became Full Professor in 1989. From 1986 to 1987, he was a Visiting Fulbright Scholar at the Georgia Institute of Technology, Atlanta, working on antennas, and electromagnetic imaging and visualization. From 1989 to 1994, he served as Director of the Telecommunication Engineering School (UPC), and from 1994-2000, as UPC Vice-rector for Academic Planning. From 2000 to 2001, he was a Visiting Professor at the Electrical and Computer Engineering Department, Henry Samueli School of Engineering, University of California, where he worked on reconfigurable antennas and sensors for civil engineering applications. From 2002 to 2004 he served as Director of the Catalan Research Foundation and since 2003 as director of the UPC-Telefonica Chair on Information Society Future Trends. He is a member of the Catalan Studies Institute since 1996 and 2010 IEEE Fellow. His research interests include antennas, electromagnetic scattering and imaging, and system miniaturization for wireless and sensing industrial and bio applications from microwave to THz frequencies. He has published more than 150 scientific and technical papers, reports and chapters in specialized volumes.

Piergiorgio Uslenghi
Education:
Ph.D. Physics, The University of Michigan, 1967
M.S. Physics, The University of Michigan, 1964
Dott. Ing. Electrical Engineering, Polytechnic of Turin, Italy, 1960
Professional Achievements:
Fellow, IEEE; First Editor-in-Chief of Antennas and Wireless Propagation Letters, a new web-based scientific publication, 01/01; Honored as a Distinguished Alumnus by the Polytechnic of Turin, Italy, 04/01; President of the IEEE Antennas and Propagation Society, 2001; Vice President of the IEEE Antennas and Propagation Society, 2000
Research Interests:
Current research interests are in electromagnetics, scattering theory, modern optics, solid state, and applied mathematics. Current research efforts include the development of analytic-numerical models for scattering by anisotropic materials, frequency-selective sheets and imperfect conductors; studies of diffraction by bodies with cavities; model theory of graded-index anisotropic optical fibers; evaluation and modification of radar cross sections; design, measurement and evaluation of radar absorbing materials; nonlinear electromagnetic properties of composites.

Jin-Fa Lee
Jin-Fa Lee received the B.S. degree from National Taiwan University, in 1982 and the M.S. and Ph.D. degrees from Carnegie-Mellon University in 1988 and 1989, respectively, all in electrical engineering. From 1988 to 1990, he was with ANSOFT (later acquired by ANSYS) Corp., where he developed several CAD/CAE finite element programs for modeling three-dimensional microwave and millimeter-wave circuits. From 1990 to 1991, he was a post-doctoral fellow at the University of Illinois at Urbana-Champaign. From 1991 to 2000, he was with Department of Electrical and Computer Engineering, Worcester Polytechnic Institute. He joined the Ohio State University at 2001 where he is currently a Professor in the Dept. of Electrical and Computer Engineering. Prof. Lee is an IEEE fellow and is currently serving as an associate editor for IEEE Trans. Antenna Propagation and as a Distinguished Lecturer for IEEE AP Society for the term of 2011-2013. Prof. Lee’s main research interests include Electromagnetic Field Theories, Antennas, numerical methods and their applications to computational electromagnetics, analyses of numerical methods, fast finite element methods, fast integral equation methods, hybrid methods, three-dimensional mesh generation, domain decomposition methods, and multi-physics simulations and modeling.

Olav Breinbjerg
Olav Breinbjerg was born in Silkeborg, Denmark on July 16, 1961. He received the M.Sc. and Ph.D. degrees in electrical engineering from the Technical University of Denmark (DTU) in 1987 and 1992, respectively. Since 1991 he has been on the faculty of the Department of Electrical Engineering of DTU where he is now Full Professor and Head of the Electromagnetic Systems Group including the DTU-ESA Spherical Near-Field Antenna Test Facility. Olav Breinbjerg was a Visiting Scientist at Rome Laboratory, Hanscom Air Force Base, Massachusetts, USA in the fall of 1988, a Fulbright Research Scholar at the University of Texas at Austin, Texas, USA in the spring of 1995, and a Guest Professor at the University of Siena, Italy in the spring of 2011. His research is generally in applied electromagnetics - and particularly in antennas, antenna measurements, computational techniques and scattering – for applications in wireless communication and sensing technologies. At present, his interests focus on metamaterials, antenna miniaturization, and spherical near-field antenna measurements. He is the author or co-author of more than 45 journal papers, 150 conference papers, and 70 technical reports, and he has been or is the main supervisor of 10 Ph.D. students. He has taught several B.Sc. and M.Sc. courses in the area of applied electromagnetic field theory on topics such as fundamental electromagnetics, analytical and computational electromagnetics, antennas, and antenna measurements at DTU, where he has also supervised more than 35 M.Sc. projects. Furthermore, he has given short courses at other European universities and within the European School of Antennas. He is currently the coordinating teacher at DTU for the 3rd semester course 31400 Electromagnetics, and the 7-9th semester courses 31428 Advanced Electromagnetics, 31430 Antennas, and 31435 Antenna Measurements in Radio Anechoic Chambers. Olav Breinbjerg received a US Fulbright Research Award in 1995. Also, he received the 2001 AEG Elektron Foundation’s Award in recognition of his research in applied electromagnetics. Furthermore, he received the 2003 DTU Student Union’s Teacher of the Year Award for his course on electromagnetics.
Thomas Kürner

Thomas Kürner (S’91-M’94-SM’01) received the Dipl.-Ing. degree in Electrical Engineering from Universität Karlsruhe (Germany) in 1990 and the Dr.-Ing. degree in 1993 from the same university. From 1990 to 1994 he was with the Institut für Höchstfrequenzttechnik und Elektronik (IHE) at the University of Karlsruhe working on wave propagation modelling, radio channel characterization and radio network planning. From 1994 to 2003, he was with the radio network planning department at the headquarters of the GSM 1800 and UMTS operator E-Plus Mobilfunk GmbH &Co KG, Düsseldorf, where he was “Team Manager Radio Network Planning Support” being responsible for radio network planning tools, algorithms, processes and parameters. Since 2003, he has been a Professor for Mobile Radio Systems at the Institut für Nachrichtentechnik (IfN) at Technische Universität Braunschweig. His working areas are propagation, traffic and mobility models for automatic planning of mobile radio networks, planning of hybrid networks, car-to-car communications, indoor channel characterization for high-speed short-range systems including future terahertz communication systems as well as propagation aspects in satellite navigation systems. He has been engaged in several international bodies such as ITU-R SG 3, UMTS Forum Spectrum Aspects Group, COST 231/273/259, where he chaired the working group “Network Aspects”, and COST 2100. He was also a work package leader in the European IST-MOMENTUM project working on methods for “Automatic Planning of large-scale Radio Networks” and was active in the European ICT-SOCRATES project of self-organisation in LTE networks. Currently, he is chairing the IEEE802.15 Interest Group THz. He has served as Vice-Chair Propagation at the European Conference on Antennas and Propagation (EuCAP) in 2007 and 2009 and in the IEEE Vehicular Technology Conference Fall 2010 and is Associate Editor of IEEE Transactions on Vehicular Technology since 2008. He is a member of VDE/ITG, VDI, Senior Member of the IEEE and an elected member of URSI commission F.

Cyril Mangenot

Cyril Mangenot was born in France in 1962. He received the Master in Electrical Engineering and Ph.D. degrees from Paul Sabatier University (Toulouse, France) in 1986 and 1989, respectively. He did his DEA (Extensive Study Diploma) on modelling of printed patch antenna on cylindrical launcher structure with Matra Marconi Space (now Astrium SAS) and his Ph.D on power synthesis of shaped beam antenna patterns in partnership with Alcatel Espace (now Thales Alenia Space). From 1989 to 2002 he was with ALCATEL SPACE, first as an antenna engineer for Spaceborne radars then as Head of the Antenna studies section in the Antenna Department. Since 2002 he has been with the European Space Research and Technology Centre (ESTEC), European Space Agency, Noordwijk, The Netherlands as Head of Antenna and sub-millimetre wave section in the Electromagnetics and Space Environment Division. His research interests are mainly in the field of array and multibeam antennas for satellite applications. He has co-authored 6 patent applications. He developed teaching experience with several contributions in high school and organised the 1st course on “antennas for space applications” as part of the European School of Antennas in 2006. He is a member of EurAAP and of the EuCAP steering committee as well as reviewer for IEEE Transactions on antennas and Propagation.

Michael Jensen

Prof. Michael Jensen received the B.S. and M.S. degrees in Electrical Engineering from Brigham Young University in 1990 and 1991, respectively, and the Ph.D. in Electrical Engineering at the University of California, Los Angeles in 1994. Since 1994, he has been at the Electrical and Computer Engineering Department at BYU where he is currently a Professor and Department Chair. He teaches courses in electromagnetics, high-frequency circuit design, and signal processing for communications. Dr. Jensen’s research focuses on characterizing propagation channels and designing antennas for wireless communications as well as the development of advanced signal processing techniques for robust and secure communications. His publications in these areas include 3 book chapters, 59 journal articles, and over 150 conference articles. As a result of his work, he has been awarded the H. A. Wheeler paper award in the IEEE Transactions on Antennas and Propagation in 2002 and the best student paper award at the 1994 IEEE International Symposium on Antennas and Propagation. He was elevated to the grade of IEEE Fellow in 2008. Dr. Jensen is the Editor-in-Chief of the IEEE Transactions on Antennas and Propagation. He has previously served as member and chair of the Joint Meetings Committee for the IEEE Antennas and Propagation Society, a member of the Administrative Committee for this same society, and has been Vice-Chair or Technical Program Chair for seven different symposia. He has also been associate editor for IEEE Antennas and Wireless Propagation Letters, IEEE Transactions on Antennas and Propagation, and IEEE Antennas and Propagation Magazine. He is the co-founder of two companies that continue to do business in Utah County.

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Manos M. Tentzeris
Professor Tentzeris was born and grew up in Piraeus, Greece. He graduated from Ionidios Model School of Piraeus in 1987 and he received the Diploma degree in Electrical Engineering and Computer Science (Magna Cum Laude) from the National Technical University in Athens, Greece, in 1992 and the M.S. and Ph.D. degrees in Electrical Engineering and Computer Science from the University of Michigan, Ann Arbor in 1993 and 1998.

He is currently a Professor with the School of ECE, Georgia Tech and he has published more than 320 papers in refereed Journals and Conference Proceedings, 3 books and 17 book chapters, while he is in the process of writing 2 books. He is currently the Georgia Electronic Design Center Associate Director for RFID/Sensors research, while he had been the GT-Packing Research Center (NSF-ERC) Associate Director for RF research and the leader of the RF/Wireless Packaging Alliance from 2003-2006. Also, Dr. Tentzeris is the Head of the A.T.H.E.N.A. Research Group (20 students and researchers) and has established academic programs in Highly Integrated/Multilayer Packaging for RF and Wireless Applications using ceramic and organic flexible materials, paper-based RFID’s and sensors, Microwave MEM’s, SOP-integrated (UWB, multiband, conformal) antennas and Adaptive Numerical Electromagnetics (FDTD, MultiResolution Algorithms). He was the 1999 Technical Program Co-Chair of the 54th ARFTG Conference and he is currently a member of the technical program committees of IEEE-IMS, IEEE-AP and IEEE-ECTC Symposia. He was the TPC Chair for the IMS 2008 Conference and he will be a Co-Chair of the ACES 2009 Symposium. He was the Chairman for the 2005 IEEE CEM-TD Workshop. He was the Chair of IEEE-CPMT TC16 (RF-Subcommittee) and he was the Chair of IEEE MTT/AP Atlanta Sections for 2003. He is a Fellow of IEEE, a member of MTT-15 Committee, an Associate Member of European Microwave Association (EuMA), a Fellow of the Electromagnetics Academy, and a member of Commission D, URSI and of the the Technical Chamber of Greece. He is the Founder and Chair of the newly formed IEEE MTT-S TC-24 (RFID Technologies). His hobbies include basketball, swimming, ping-pong and travel.

Jun-Ichi Takada
Present positions:
Professor, Department of International Development Engineering, Graduate School of Engineering, Tokyo Institute of Technology

Curriculum Vitae:
Jun-Ichi Takada (Senior Member) received B.E. and D.E. degrees from Tokyo Institute of Technology in 1987 and 1992, respectively. He was a Research Associate at Chiba University in 1992-1994, and an Associate Professor at Tokyo Institute of Technology in 1994-2006. He has been a Professor in Tokyo Institute of Technology since 2006. In 2003-2007, he was a Researcher in National Institute of Information and Communications Technology, where he has currently been a Visiting Researcher.

His current interests include the radiowave propagation and channel modeling for various wireless systems, MIMO OTA test, spectrum sensing technology, regulatory issues of spectrum sharing. He served as a secretary and the chair of ICICE Technical Committee on Software Radio in 2001 - 2007 and 2007 - 2009, respectively. He served as the chair of measurement WG in ITU-R TG 1/8 on compatibility between UWB devices and radiocommunication services in 2005. He served as the co-chair of SIG in body communications in European COST action 2100 “Pervasive Mobile & Ambient Wireless Communications” by 2010. He currently serves as an assistant secretary of Japan National Committee of URSI. He has extensively involved in the international cooperation and development projects in East Asia. He is currently working with the Department World Heritage in Luang Prabang, Lao PDR in database and GIS application, and with the Mongolian State University of Education in development of in-service teacher training materials using ICT. He is a senior member of IEICE and IEEE, a member of ACES, ITE, ECTI Association Thailand and JASID.
Prabhakar Pathak received a BS in physics from the University of Bombay in 1962, a BSEE in 1965 from Louisiana State University, his MSEE in 1970 and his Ph.D. in 1973, both graduate degrees from The Ohio State University. He has been at the ESL since he finished his schooling. He served a three year term as a distinguished lecturer for the IEEE Antenna and Propagation Society. He is a Fellow of the IEEE and is also a member of the U.S. Commission B of the International Scientific Radio Union (URSI) and of Sigma Xi.

Dr. Pathak has primarily dealt with the development of uniform asymptotic solutions which improve and extend the geometrical theory of diffraction for solving antenna and scattering problems associated with complex structures, such as aircraft and spacecraft. Some of this research has also been involved with an analysis of the problems of diffraction by discontinuities in the geometric as well as in the electrical properties of a surface; the latter category includes surface wave structures. In addition, has had been involved with the development of efficient hybrid methods for analysis of conformal antennas as well as RCS problems, and more recently for dealing with EM wave propagation in shipboard and urban environments. Currently, his work continues to be in the areas of asymptotic and hybrid methods, and in the development of uniform time domain ray solutions. He is also involved in the development of Gaussian Beam Techniques for antennas and other applications.

Zhi Ning Chen (BEng, MEng, and PhDs) worked at Institute of Communications Engineering, Southeast University, and City University of Hong Kong, China with teaching and research appointments during 1988-1997. In 1997, he was awarded JSPS Fellowship to join in University of Tsukuba, Japan. In 2004, he worked at IBM T. J. Watson Research Center, USA as Academic Visitor. Since 1999, he has worked with Institute for Infocomm Research, Singapore and his current appointments are Principal Scientist and Department Head for RF & Optical. Dr. Chen has organized many international technical events as key organizer. He is the founder of International Workshop on Antenna Technology (iWAT).

He has published 290 journal and conference papers as well as authored and edited the books entitled Broadband Planar Antennas, UWB Wireless Communication, Antennas for Portable Devices, and Antennas for Base Station in Wireless Communications. He also contributed chapters to the books entitled UWB Antennas and Propagation for Communications, Radar, and Imaging as well as Antenna Engineering Handbook. He is holding 28 granted and filed patents with 21 licensed deals with industry. He is the recipient of the CST University Publication Award 2008, IEEE AP-S Honorable Mention Student Paper Contest 2008, IES Prestigious Engineering Achievement Award 2006, I2R Quarterly Best Paper Award 2004, and IEEE IWAT 2005 Best Poster Award.

Dr. Chen has current research interest includes applied electromagnetic engineering, RF transmission over bio-channels, and antennas for wireless systems, in particular at mmW, submmW, and THz for medical and healthcare applications. Dr. Chen is a Fellow of the IEEE for his contribution to small and broadband antennas for wireless. He is serving as an IEEE Antennas and Propagation Society Distinguished Lecturer and Associate Editor of IEEE Transactions on Antennas and Propagation.
Monday, 11th April

28 14:00 - 16:20 Room: Auditorium
CA17: New challenges on Ultra Wide Band antennas & systems (part1)

Chairs: Milos Mazanek (Czech Technical University in Prague, Czech Republic), Christian Sturm (Karlsruhe Institute of Technology (KIT), Germany), Perti Vainikainen (Aalto University, Finland)

Research of Circular Polarisation Quality by Broadband Antennas Up to 40 GHz
Milos Mazanek (Czech Technical University in Prague, Czech Republic), Christian Sturm (Karlsruhe Institute of Technology, Germany) et al.

Evaluation of RF Localization for Deep Brain Implants
Dirk Manteuffel; Peter A. Hoeher (University of Kiel, Germany); Maximilian Mehdorn (UKSH Kiel, Germany); et al.

An Impulse Radio UWB Hardware Demonstrator for Body Area Network Communication
Oliver Lauer; David Barras; Marco Zahner; Jürg Fröhlich (Swiss Federal Institute of Technology Zurich, Switzerland)

Exploitation of Spline-based Geometries for the Time-domain Synthesis of UWB Antennas
Leonardo Lizzi; Giacomo Oliveri (University of Trento, Italy); Andrea Massa (University of Trento, Italy)

Permittivity-matched Compact Ceramic Ultra-Wideband Horn Antennas for Biomedical Diagnostics
Francesco Scotto di Clemente; Marko Helbig; Jürgen Sachs; Ulrich Schwarz; et al. (Ilmenau University of Technology, Germany)

Broadband Printed Monopole Antenna Loaded with Low Conductive Material
Solene Boucher; Xavier Castel (IETR-Université de Rennes 1, France); Ala Sharaiha (Université de Rennes 1, France); et al.

Chair: Lino Russo (Space Engineering, Italy)

Mobility in Ku and Ka Bands: The Eutelsat’s Point of View
Eros Feltrin; Elisabeth Weller (Eutelsat SA, France)

Next Generation Mobile Satcom Terminal Antennas for a Transformed World
Robert Pearson (ERA Technology Limited, United Kingdom)

Future Developments Trend for Ku and Ka Antenna for SATCOM on the Move
Luca Marcellini (TeS Teleinformatica e Sistemi, Italy)

How to select a Mobile Satcom System – Performance Vs Regulatory Requirements
Guy Naym (Orbit Communication Ltd, Israel)

Mobile Communications: High-Speed Train Antennas From Ku to Ka
Raimondo Lo Forti (OrTES L.t.d., Cyprus); Giancarlo Bellaveglia; Alesia Colasante (TES Teleinformatica e Sistemi, Italy)

Low Profile Ku-Band Transmit/Receive Terminal ODU for Satellite Mobile Communications
Ana Rosa Ruiz; Alberto Pellón; Miguel Peña (TTI, Spain)

Low Cost Ku-band Electronic Steerable Array Antenna for Mobile Satellite Communications
Stefano Vaccaro; Daniel Llorens del Río; Jose Padilla (JAST SA, Switzerland); Rens Baggen (IMST GmbH, Germany)

14:00 - 16:20 Room: A
CA16: User mobile terminal antennas

14:00 - 16:20 Room: B
CA18: Metamaterial applications (part1)

Chairs: Milos Mazanek (Czech Technical University in Prague, Czech Republic), Christian Sturm (Karlsruhe Institute of Technology (KIT), Germany), Perti Vainikainen (Aalto University, Finland)

Impact of Current Localization on the Performance of Compact MIMO Antennas
Hui Li; Buon Kiong Lau; Yi Tan (Lund University, Sweden); Sailing He (Royal Institute of Technology, Sweden); et al.

Latest Advances in Mode-Stirred Reverberation Chambers for MIMO OTA Evaluation of Wireless Communications Devices
M. A. García-Fernández; D. A. Sánchez-Hernández (Technical University of Cartagena, Spain); Juan Valenzuela-Valdés (Emite Ing, Spain)

On the Switching Rate of ST-MIMO Systems with Energy-based Antenna Selection
Athanasios Lioumpas; Angeliki Alexiou (University of Piraeus, Greece)

Eigen-Beamspace Adaptive Antenna for OFDM Transmission with Zero Carriers
Kazunari Kihira (Mitsubishi Electric Corporation, Japan)

Performance of Cooperative MIMO Based on Measured Urban Channel Data
Michael Jensen (Brigham Young University, USA); Buon Kiong Lau (Lund University, Sweden); et al.

Beamforming in Interference Networks for Uniform Linear Arrays
Rami Mochaourab; Eduard Jorswieck (Dresden University of Technology, Germany)
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| 14:00 - 16:20| D    | **CA03: Integral Techniques in Electromagnetics (INTELECT) part 1**
Chairs: Athanasios Polimeridis (EPFL, Switzerland), Francesca Vipiana (Istituto Superiore Mario Boella (ISMB), Italy)
Some new developments of the Weighted Averages Algorithm
Juan R. Mosig (Ecole Polytechnique Federale de Lausanne, Switzerland)
Spatial Error Criterion for Discrete Complex Image Method
Emine Pinar Karabulut; Alper T. Erdogan; Irsadi Aksun (Koc University, Turkey)
Discrete Complex Image Approximation of Periodic Green's Functions in Multilayer Media
Suleyman Adanir; Lale Alatan (METU, Turkey)
Low Frequency Stability of the Mixed Discretization of the MFIE
Ignae Bogart; Kristof Cools (Ghent University, Belgium); et al.
Discretization of the Electric-Magnetic Field Integral Equation with the Divergence-Taylor-Orthogonal Basis Functions
Eduard Ubeda; Jose M. Tamayo; Juan M. Rius (Universitat Politècnica de Catalunya, Spain)
A Contribution to the Efficient Computation of Multilayered Periodic Green's Functions
Rafael Boix (University of Seville, Spain) |
| 14:00 - 16:20| G1   | **CA23: Small antennas (EurAAP Working Group) part 1**
Chairs: Max James Ammann (Dublin Institute of Technology, Ireland), Pavel Hazdra (Czech Technical University in Prague, Czech Republic)
Organizer: Eva Antonino-Daviu (Universidad Politecnica de Valencia, Spain), Cyril Luxey (University of Nice, France)
Surface-Mounted UWB Handset Antenna with Small Envelope Volume
Max James Ammann; Matthias John (Dublin Institute of Technology, Ireland); David Kearney (TDK, Ireland)
Dual-Band WLAN Multi-Antenna System with High Isolation
Rafik Addaci (University of Nice, France)
The Spherical Shape in the Study of Antenna Q
Guy A. E. Vandenbosch (Katholieke Universiteit Leuven, Belgium)
Versatility and Tunability of an Implantable Antenna for Telemedicine
Francesco Merli; Leandre Bolomey; Jean-François; Eric; Anja K Skrivervik (EPFL, Switzerland)
Selective Excitation of Characteristic Modes on Small Terminals
Robert Martens; Eugen Salin; Dirk Manteuffel (University of Kiel, Germany)
Multi-band MIMO Antenna with Full Coverage
Xianming Qing; Zhi Ning Chen; Terence S.P. See (Institute for Infocomm Research, Singapore) |
| 14:00 - 16:20| N1   | **CP08: COST IC0802: Channel modelling for free space optical links (part 1)**
Chairs: Carlo Capsoni (Politecnico di Milano, Italy), Erich Leitgeb (TUG, Austria)
4-year Hydrometeor Attenuation Statistics Obtained At 93 GHz on an 850 M Terrestrial Path
Vaclav Kvicera; Martin Grabner (Czech Metrology Institute, Czech Republic); et al.
Linearity in Optical Attenuations for Free-Space Optical Links in Continental Fog
Muhammad Saied Khan (TUG, Austria); Muhammad Saleem Awan (Graz University of Technology, Austria); et al.
Wavelength Selection on FSO-links
Thomas Plank; Martin Czaputa; Erich Leitgeb; Sajid Sheikh Muhammad (National University of Computer and Emerging Sciences, Pakistan); et al.
Effect of Hydrometeor Scattering on Optical Wave Propagation Through the Atmosphere
Roberto Nebuloni (leit - Cnr, Italy); Carlo Capsoni (Politecnico di Milano, Italy)
FSO Link Attenuation Measurement and Modelling on Milesovka Hill
Ondrej Fiser; Jaroslav Svoboda; Zuzana Chladova (Institute of Atmospheric Physics, Czech Republic); et al. |
| 14:00 - 16:20| N2   | **CM01: Pattern Comparison Techniques (AMTA session and Workshop) part 1**
Chairs: Lars Jacob Foged (SATIMO, Italy), Carlo Rizzo (Tecnologica Ltd., United Kingdom), Manuel Sierra-Castañer (Technical University of Madrid, Spain)
Historical Background on the Use of Equivalent Stray Signal in Comparison of Antenna Patterns
Doren W. Hess (MI Technologies, USA)
The Use of Statistical Image Classification Techniques for the Assessment of Measured Antenna Pattern Functions
John McCormick (Selex SAS, United Kingdom); Stuart F Gregson (Nearfield Systems Inc., USA); Clive Parini (QMUL, United Kingdom)
Validation Standard Antennas: Past, Present and Future
Luca Salghetti; Allan Østergaard; Maurice Paquay; Elena Saenz; Sergey Pivnenko (European Space Agency, The Netherlands)
Antenna Pattern Comparison Using Pattern Subtraction and Statistical Analysis
Allen Newell (Nearfield Systems Inc., USA)
Facility Comparison Campaigns Within EURAPP
Lars Jacob Foged (SATIMO, Italy); Manuel Sierra-Castañer (Technical University of Madrid, Spain); Lucia Scialacqua (SATIMO, Italy) |

Coffee Break 16:20 - 16:40
**Monday, 11th April**

**14:00 - 16:20 Room: N3**

**CP05: Recent Advances in MIMO Systems: Channel Characterization and Antenna-Channel Interactions (part1)**
- Chairs: Michael Jensen (Brigham Young University, USA), Buon Kiong Lau (Lund University, Sweden)
- Channel Sounding Technique Using MIMO Software Radio Architecture
  - Yohei Konishi; Minseok Kim; Mir Ghoraishi; Jun-ichi Takada; Satoshi Suyama; Hiroshi Suzuki (Tokyo Institute of Technology, Japan)
- Solving the Problem of Choosing the Right MIMO Measurement Antenna: Embedding/De-Embedding
  - Martin Käske; Christian Schneider; Wim A. Th. Kotterman; Reiner S. Thomä (TU-Illmenau, Germany)
- Measurement-based Delay Spread Analysis of Indoor Distributed Antenna Systems
  - Fengyu Luan; Yan Zhang; Xinwei Hu; Shidong Zhou; Limin Xiao; Xibin Xu (Tsinghua University, P.R. China)
- On the Accuracy of Synthesised Wave-Fields in MIMO-OTA Set-Ups
  - Wim A. Th. Kotterman; Albert Heuberger; Reiner S. Thomä (TU-Illmenau, Germany)
- Use of Realistic Propagation Channel Information in MIMO Antenna System Evaluation
  - Perti Vainikainen (Aalto University, Finland); Enrico Maria Vtucci; Vittorio Degli-Esposti (University of Bologna, Italy); et al.
- Antenna Optimization for Time-variant MIMO Systems
  - Lars Reichardt; Juan Pontes; Yoke Leen Sit; Thomas Zwick (Karlsruhe Institute of Technology, Germany)

**14:00 - 16:20 Room: S1**

**CA08: Research challenges in RF exposure assessment (part1)**
- Traffic Analysis for Exposure Assessment in Mobile Telephony
  - Zaher Mahfouz; Azzeddine Gati (Orange Labs, France); David Lautru (University Paris 06, France); et al.
- Research Challenges in Numerical Dosimetry for New Wireless Technologies
  - Soichi Watanebe; Kanako Wake; Tomoaki; Taji Sakai; Sang-Wook Park (National Institute of Information and Communications Technology, Japan)
- Statistical Study of SAR in Clustered Wireless Channels
  - Ourok Jawad (Université Libre de Bruxelles, Belgium); David Lautru (University Paris 06, France); et al.
- Numerical mobile phone models validated by SAR measurements
  - Yenny C Pinto (Telecom Bretagne, France); Amal Ghanmi; Abdelhamid Hadjem; Emmanuelle Conil (France Telecom R&D, France); et al.
- A new approach to assess the Specific Absorption Rate induced by multiple plane waves at 2.1 GHz
  - Thierry Kientega (Whist Lab and Orange Labs, France)
- Methods for Measuring In-Situ Exposure Induced by Non-Regular Signals Like WLAN and LTE
  - Azzeddine Gati (Orange Labs, France); Joe Wiart (France Telecom R&D, France)

**14:00 - 16:20 Room: S2**

**CA12: Radar imaging and sensing (part1)**
- Three-dimensional Micro-Antenna Array for Millimetre and Sub-Millimetre-Wave Remote Imaging
  - Paolo Nenzi; Francesco Tripa; Marco; Frank S. Marzano (Sapienza University of Rome, Italy)
- Aperture Array Development for Future Large Radio Telescopes
  - Pieter Benthem; Gideon Kant; Stefan J. Wijnholds (ASTRON, The Netherlands); et al.
- A Technology Demonstrator for a 0.5 m x 0.5 m Fully Electronic Digital Beamforming mm-Wave Imaging System
  - Andreas Schiessl; Sherif Ahmed; Andreas Genghammer (Rohde & Schwarz, Germany); et al.
- On the Practical Applicability of Series Expansions for Kirchhoff Diffractions
  - Stefano Perna; Antonio Iodice (Università degli Studi di Napoli Federico II, Italy)

**14:00 - 16:20 Room: S3**

**CA12: Radar imaging and sensing (part2)**
- Non-Specular Scattering Modeling for THz Propagation Simulations
  - Sebastian Priebe; Martin Jacob; Christian Jansen; Thomas Kürner (Technische Univ. Braunschweig, Germany)
- Stochastic Scattering Model for the Application of SBR to Rough Surfaces
  - Frank Weinmann (Fraunhofer FHR, Germany)
- Path-Integral Derivation and Analysis of Approximate Directed Wave Propagators
  - Gregory Samelsohn (Holon Institute of Techn., Israel)
- GPR Reconstruction of the Features of Martian Subsoil in the Frame of the ExoMars Mission
  - Guido Valerio (Sapienza University of Rome, Italy); Pier Matteo Barone; Sebastian Lauro; Elisabetta Mattei (Roma Tre University, Italy)
Chairs: Milos Mazanek (Czech Technical University in Prague, Czech Republic), Christian Sturm (Karlsruhe Institute of Technology (KIT), Germany), Pertti Vainikainen (Aalto University, Finland)

Experimental Identification of an Image Source Distribution on an Indoor Map
Katsuyuki Haneda; Andreas Richter; Pertti Vainikainen (Aalto University, Finland)

UWB Medical Diagnostic: In-Body Transmission Modeling and Applications
Elena Pancera (Karlsruhe Institute of Technology, Germany)

Super Wideband Antenna, a World Record?
D Tran (IRCTR, The Netherlands); A Szilagyi (METRA, Romania); Ioan E. Lager (Delft University of Technology, The Netherlands); et al.

Impact of Antenna Pattern on UWB Time-Based Ranging
Marzieh Daahi (Tokyo Institute of Technology, Japan); Afroza Khatun (Aalto University School of Electrical Engineering, Finland); et al.

Chair: Lino Russo (Space Engineering, Italy)

Flat Array Antenna for Ku-band Mobile Satellite Terminals
Roberto Vincenti Gatti (RF Microtech, Italy); Luca Marcaccioli; Elisa Sbarra; Roberto Sorrentino (University of Perugia, Italy)

Towards a Broadband and Squint-Free Ku-Band Phased Array Antenna System for Airborne Satellite Communications
David Marpaung; Leimeng Zhuang; Maurizio Burla; Chris Roeloffzen (University of Twente, The Netherlands); et al.

KA Band Active Phased Array Antenna System for Satellite Communication on the Move Terminal
Carmelo mollura; Francesco DiMaggio; Massimo Russo (Selex Communications, Italy)

Phased Array Technology for Mobile User Terminals
Rens Baggen; Sybille Holzwarth; Martin Böttcher; Bahram Sanadgol (IMST GmbH, Germany)

T/R Modules Technology for Mobile Terminals
Marzia Migliorelli (Space Engineering S.p.A, Italy)

Quadrature Hybrid for Feeding DVB-T Antenna Arrays Transmitting Circular Polarized Waves
Daniel Bertko; Ronny Hahnle (Dresden University of Technology, Germany)

Chairs: George V. Eleftheriades (University of Toronto, Canada), Sergei Tretyakov (Helsinki University of Technology, Finland)

Equivalent Circuits for Electrically Small Antennas
Carl Pfeiffer; Anthony Gribic (University of Michigan, USA)

Broadband Microwave Devices Based on Artificial Transmission Lines
Irina Vendik (St. Petersburg electrotechnical university, Russia)

Non-Foster Elements - New Path Towards Broadband ENZ and MNZ Metamaterials
Silvio Hrabar; Igor Krois; Ivan Bonic; Aleksandar Kiricenko (University of Zagreb, Croatia)

Tunnelling and Radiating Phenomena Related to Coupled Omega Particles
Luca Scorrano; Simone Tricarico; Filiberto Bilotti; Lucio Vegni (University of Roma Tre, Italy)

Size-independent Metamaterial Resonators
Piergiorgio L.E. Uslenghi (University of Illinois at Chicago, USA)

Chairs: Miguel Angel Lagunas (Telecommunications Technological Center of Catalonia, Spain), Ana Isabel Perez (Universitat Polit`ecnica de Catalunya, Spain)

On Multistreaming with Electrically Small Antenna Arrays
Josef A. Nossek; Michel Ivrlac (Munich University of Technology, Germany)

System-Level Implications of Residual Transmit-RF Impairments in MIMO Systems
Christoph Studer; Markus Wenk (ETH Zurich, Switzerland); Andreas Burg (EPFL, Switzerland)

Reliable MIMO Communication Between Firefighters Equipped with Wearable Antennas and a Base Station Using Space-time Codes
Patrick Van Torre; Luigi Vallozzi; Hendrik Rogier; Marc Moeneclaey; Jo Verhaevert (University College Ghent, Belgium)

Statistical Evaluation of the MIMO Gain for LMS Channels
Ernst Eberlein; Frank Burkhardt; Carmen Wagner (Fraunhofer Institute for Integrated Circuits IIS, Germany); et al.

Antenna Effects in Wireless Communication Scenario
Arijit De (Syracuse University, USA); Tapan Sarkar (USA); Magdalena Salazar-Palma (Universidad Carlos III de Madrid, Spain)
Monday, 11th April

16:40 - 18:20 Room: D
CA03: Integral Techniques in Electromagnetics (INTELECT) part 2

Chairs: Athanasios Polimeridis (EPFL, Switzerland), Francesca Vipiana (Istituto Superiore Mario Boella (ISMB), Italy)

Numerical Evaluation of Near Strongly Singular Integrals Via Singularity Cancellation Techniques
Francesca Vipiana (Istituto Superiore Mario Boella (ISMB), Italy); Donald R Wilton (University of Houston, USA)

Generation of Beams by Aperture Field Spectra
Massimiliano Casaletti; Stefano Maci (University of Siena, Italy); Sinisa Skokic (University of Zagreb, Croatia)

3-Simplex Interpolation of the Mixed-Potential Green’s Functions in Layered Media
Matteo Alessandro Francavilla (Politecnico di Torino, Italy); Ronald R Wilton; Simone Paulotto; David Jackson (University of Houston, USA)

Improving the Convergence of Double Series Summation Encountered in the Analysis of Curved Frequency Selective Surfaces
Zvonimir Sipus; Marko Bosiljevac (University of Zagreb, Croatia)

16:40 - 18:20 Room: G1
CA23: Small antennas (EurAAP Working Group) part2

Chairs: Eva Antonino-Daviu (Universidad Politecnica de Valencia, Spain), Pavel Hazdra (Czech Technical University in Prague, Czech Republic), Cyril Luxey (University of Nice, France), Dirk Manteuffel (University of Kiel, Germany)

Increasing the Bandwidth of Electrically Small Supergain Antennas Using Low-Q Electric Dipoles
Arthur D Yaghjian (Research Consultant, USA); Howard Stuart (LGS, Bell Labs Innovations, USA)

Negative Impedance Converters (Nics) in the Design of Small and Multifrequency Antennas
Vincenzo Gonzalez-Posadas (Universidade Politecnica de Madrid, Spain); Eduardo Ugarte-Muñoz (University Carlos III in Madrid, Spain) et al.

State-of-the-art in the Design of Electrically Small Antennas
Steven R. Best (The MITRE Corporation, USA)

Small Dual-band Fractal Antenna with Orthogonal Polarizations
Pavel Hazdra; Jan Eichler; Miloslav Capek; Pavel Hamouz; Korinek (Czech Technical University in Prague, Czech Republic)

16:40 - 18:20 Room: N1
CP09: COST IC0802: Channel modelling for free space optical links (part2)

Chairs: Carlo Capsoni (Politecnico di Milano, Italy), Erich Leitgeb (TUG, Austria)

Free-space Optical High-Speed Link in the Urban Area of Southern Rome: Preliminary Experimental Set Up and Channel Modelling
Frank S. Marzano; Saverio Mori; Fabrizio Frozza (Sapienza University of Rome, Italy) et al.

Measurement Data for FSO and E-band Radio Propagation Modeling
Laszlo Csurgai-Horvath (Budapest University of Technology and Economics, Hungary); Erich Leitgeb (TUG, Austria); Jan Turan (Slovakia)

FSO Ground Network Optimization and Analysis Considering the Influence of Clouds
Frederic Lacoste; Alexandre Guérin; Andre Laurens (CNES, France); Guillaume Azema (Thales, Solutions de Securite et Services, France) et al.

16:40 - 18:20 Room: N2
CM01: Pattern Comparison Techniques (AMTA session and Workshop) part2

Chairs: Lars Jacob Foged (SATIMO, Italy), Carlo Rizzo (Tecnologica Ltd., United Kingdom), Manuel Sierra-Castañer (Technical University of Madrid, Spain)

Workshop (AMTA) Pattern Comparison in Antenna Measurement
Manuel Sierra-Castañer (Technical University of Madrid, Spain); Sergey Pwumenko (Technical University of Denmark, Denmark)

16:40 - 18:20 Room: N3
CP05: Recent Advances in MIMO Systems: Channel Characterization and Antenna-Channel Interactions (part2)

Chairs: Michael Jensen (Brigham Young University, USA), Buon Kiong Lau (Lund University, Sweden)

MIMO Base Station Antenna Employing Mode Selection in Vertically Split Array
Yuki Inoue; Keizo Cho (NTT DoCoMo, Japan)

Experimental Evaluation of MIMO Terminal Antenna Configurations in Noise- and Interference-Limited Urban Scenarios
Vanja Plicanic; Buon Kiong Lau (Lund University, Sweden); Henrik Asplund (Ericsson Research, Ericsson AB, Sweden)

Rashid Mehmood; Jon Wallace (Jacobs University Bremen, Germany)

Antennas in Real Environments
Boyan R Yanakiev; Morten Christensen (Molex Interconnect, Denmark); Jesper Ø Nielsen; Gert Pedersen (Aalborg University, Denmark)

MIMO Sensor — Evaluation on Antenna Arrangement
Kentaro Nishimori (Niigata University, Japan)
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| 16:40 - 18:20| S1     | CA08: Research challenges in RF exposure assessment (part 2)  
Chairs: Guglielmo d’Inzeo (Univ. La Sapienza, Roma, Italy), Joe Wiart (France Telecom R&D, France)  
Evaluation and Simulation of EM Dosimetry in a Real Indoor Scenario  
Víctor Torres (Universidad Pública de Navarra, Spain); Jorge Becerra (Universidad Pública de Pamploña, Mexico); et al.  
Evaluations on SAR Around Implanted Cardiac Pacemaker by Mobile Radio Terminal  
Kazuyuki Saito; Yuta Endo; Soichi Watanabe (National Institute of Information and Communications Technology, Japan); et al.  
Avoiding the Interaction Between Hand and Capacitive Coupling Element Based Mobile Terminal Antenna  
Risto Valkonen; Janne Ilvonen; Kimmo Rasilainen; Jan Holopainen (Aalto University, Finland) et al.  
Fast SAR Methods for Electromagnetic Exposure Evaluation of Wireless Devices  
Mark Douglas (IT’IS Foundation ETH Zurich, Switzerland); Sami Gabriel (Vodafone Group R&D, United Kingdom) et al. |
| 16:40 - 18:20| S2     | P02: Propagation in remote sensing  
Chairs: Michele D’Amico (Politecnico di Milano, Italy), Danielle Vanhoenacker-Janvier (Université catholique de Louvain, Belgium)  
Target Classification Through Time-Reversal Operator Analysis Using Ultrawideband Electromagnetic Waves  
Mehmet E Yavuz (Intel Corporation, USA; Ahmed E. Fouda; Fernando Teixeira) (Ohio State University, USA)  
System Simulation of a Localization System Based on Power Level Detection with Distributed Antennas  
Arndt T. Ott; Mohammed Shalaby; Uwe Siart; Robert Brem; Thomas F. Elbert (Technische Universität München, Germany) et al.  
Effects of Incident Wave Polarization on Boresight Error  
Hongfu Meng (Southeast University, P.R. China)  
Polarization Investigation of Rough Surface Scattering for THz Propagation Modeling  
Sebastian Priebe; Martin Jacob; Thomas Kürner (Technische Universität Braunschweig, Germany)  
Modelling Polarimetric Effects of Precipitation on Spaceborne Side-Looking Aperture Radar Response  
Saverio Mori; Frank S. Marzano; Mario Montopoli; Luca Pulvirenti; Nazzareno Pierdicca (Sapienza University of Rome, Italy) et al.  
Landmine Detection Using Ground Penetrating Radar and Polarimetric Synthetic Aperture Radar  
Vaclav Kabourek (Czech Technical University in Prague, Czech Republic) |
| 16:40 - 18:20| S3     | CA12: Radar imaging and sensing (part 2)  
Chairs: Alessandro Galli (Sapienza University of Rome, Italy), Alexander Yarovoy (Delft University of Technology, The Netherlands)  
A Multistatic Tomographic Approach to Microwave Imaging of Dielectric Targets  
Andrea Randazzo; Matteo Pastorino (University of Genoa, Italy) et al.  
Using a UWB Radar Imaging Method with Five Antennas on a Target with Arbitrary Translation and Rotation Motion  
Takuya Sakamoto; Toru Sato (Kyoto University, Japan)  
Circular Microwave Tomographic Imaging. Experimental Comparison Between Quantitative and Qualitative Algorithms  
Marta Guardiola; Luis Jofre (UPC, Spain); Andreas Fhager; Mikael Persson (Chalmers University of Technology, Sweden)  
Noise Considerations for Vital Signs CW Radar Sensors  
Brian Jensen; Thomas Jensen; Vitaliy Zhurbenko; Tom Johansen (Technical University of Denmark, Denmark) |
Tuesday, 12th April

09:00 - 10:40 Room: Auditorium

CA24: RFID technologies (COST IC0803/IC0603 special session) part1

Chairs: Apostolos Georgiadis (CTTC, Spain), John Sahalos (Aristotle University of Thessaloniki, GR, Thessaloniki & University of Nicosia, CY, Nicosia, Greece)

Multi-chip RFID Tags Integrating Shape-memory Alloys for Temperature Sensing
Stefano Caizzone; Cecilia Occhiuzzi; Gaetano Marrocco (University of Rome Tor Vergata, Italy)

A Healthcare Application Based on Passive UHF RFID Technology
Anastasis C Polycarpou; George K. Gregoriou (University of Nicosia, Cyprus); et al.

Using X-parameters to Model RFID Energy Harvesting Circuits
Alírio S. Boaventura; Nuno Borges Carvalho (University of Aveiro, Portugal)

On the Design of Passive RFID Tags for ASK Modulation
Antonis G Dimitriou; John Sahalos (Aristotle University of Thessaloniki, Greece); Aggelos Bletsas (Technical University of Crete, Greece)

A Ku-band RF Self Identification (RFSID) System for Autonomous Logistics
Valeria Palazzari; Federico Alimenti; Giulia; Paolo Mezzanotte; Luca Roselli (University of Perugia, Italy)

09:00 - 10:40 Room: A

A01: Antenna Interactions and Coupling (part 1)

Chairs: Jesús Rubio (Universidad de Extremadura, Spain), Clement Yann (IETR & Thales Systemes Aeroportes, France)

Estimation of the Radiation Pattern of Finite Arrays of Waveguide-Fed Apertures From the Transmitting Characteristics of an Isolated Element
Jesús Rubio; Juan F. Izquierdo (Universidad de Extremadura, Spain)

On the Design of NFC Antennas for Contactless Payment Applications
Tim Brown; Thomas Diakos (University of Surrey, United Kingdom)

Diamagnetic Metasurfaces for Performance Enhancement of Microstrip Patch Antennas
Kwok Chung (Hong Kong Polytechnic University, Hong Kong); Sarawuth Chaimool (King Mongkut’s University North Bangkot, Thailand)

On the Impact of Arbitrary Nozzle or Dome Configurations on Dielectric Endfire Antenna Performance in Industrial Radar Level Gauging
Christian Zietz; Gunnar Armbrecht; Eckhard Denicke (Leibniz Universität Hannover, Germany); Ilona Rolfes (Ruhr-Universität Bochum, Germany)

MIMO OTA Optical Measurement Device
Boyan R Yanakiev; Morten Christensen (Molex Interconnect, Denmark); Gert Pedersen (Aalborg University, Denmark)

Coffee Break 10:40 - 11:00

Tuesday, 12th April

09:00 - 10:40 Room: B

CA07: EurAAP software WG - The future of computational electromagnetics: science or product? (part1)

Chair: Guy A. E. Vandenbosch (Katholieke Universiteit Leuven, Belgium)

The Future of Computational Electromagnetics: Science or Product
Guy A. E. Vandenbosch (Katholieke Universiteit Leuven, Belgium)

Making a Transition From University Research Lab to the World of Commercial Software for EM Modeling
Raj Mittra (Penn State University, USA)

How Does Research Fit Into the Commercial EM Tool Development Process?
Peter Thoma (CST-Computer Simulation Technology AG, Germany)

Antenna Design Framework: Solving the Eda Antinomy
Giovanni Galgani; Giancarlo Guida; Marco Sabbadin; Mauro Bandinelli; Pierlugi Di Bartolomeo (IDS Ingegneria Dei Sistemi S.p.A, Italy)

WIPL-D: From University Software to Company Product
Branko Kolundzija (University of Belgrade, Serbia)

Efficient EM CAD and Optimization by Advanced Hybrid Methods: Science and Product
Fritz Arndt (University of Bremen, Germany)

09:00 - 10:40 Room: C

CA01: Innovative array antennas (part1)

Chair: Gerard Caille (Thales Alenia Space France, France), Giovanni Toso (European Space Agency, The Netherlands)

Beamforming Capabilities of Array-fed Reflector Antennas
Łukasz Greda; Achim Dreher (German Aerospace Center (DLR), Germany)

Ku-band Reconfigurable Compact Array in Dual Polarization
Eric Vourch (Thales Alenia Space France, France)

Plate-Laminating Double-Layer Waveguide Slot Arrays for 38GHz Fixed Wireless Access Systems
Miao Zhang; Jiro Hirokawa; Makoto Ando (Tokyo Institute of Technology, Japan); Toru Taniguchi (Japan Radio Co., Ltd., Japan)

Recent Progress in Electronically Tunable Reflectarray Technology using Liquid Crystals
Robert Cahill (Queen’s University Belfast, United Kingdom); Jose A. Encinar (Universidad Politecnica de Madrid, Spain) et al.

Design and Test of an L-Band Phased Array for Maritime Satcom
Matthias Geissler (IMST, Germany); Frank Woetzel (EPAK GmbH, Germany) et al.
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<td>09:00 - 10:40</td>
<td>Room: D</td>
<td>CP01: Antennas and propagation: automotive applications (part1)</td>
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<td>Chairs: Thomas Kuerner (Braunschweig Technical University, Germany), Werner Wiesbiek (Karlsruhe Institute of Technology, Germany)</td>
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<td></td>
<td>IEEE 802.11p Based Physical Layer Simulator for Car-to-Car Communication Lars Reichardt; Yo-Keen Sit; Tom Schipper; Thomas Zwick (Karlsruhe Institute of Technology (KIT), Germany)</td>
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<td>Wideband Measurement-Based Modeling of Inter-Vehicle Channels in the 5 GHz Band Olivier Renaudin; Veli-Matti Kolmonen; Pertti Vainikainen; Claude Oestges (Université catholique de Louvain, Belgium)</td>
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<td>MIMO System Design and Field Tests for Terminals with Confined Space - Impact on Automotive Communication Eckhard Ohlmer; Gerhard Fettweis; Dirk Plettemeier (Dresden University of Technology, Germany)</td>
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<td>Channel Models for V2V Communications: A Comparison of Different Approaches David W Matolak; Giong Wu (Ohio University, USA)</td>
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<td>Comparison of Path Loss Measurements and Predictions At Urban Crossroads for C2C Communications Moritz Schack; Jörg Nuckelt; Robert Geise; Lena A. Thiele; Thomas Kürner (Technische Universität Braunschweig, Germany)</td>
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<td>09:00 - 10:40</td>
<td>Room: G1</td>
<td>CA10: Microwave imaging and sensors for medical applications (part1)</td>
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<td>Chairs: Ian Craddock (University of Bristol, United Kingdom), Paul Meany (USA)</td>
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<td>Practical Issues in Microwave Raster Scanning Reza Aminieh; Kaveh Moussakhan; Haohan Xu; Sadegh Dadash; Yona Baekharron; Li Liu; Natalia Nikolova (McMaster University, Canada)</td>
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<td>An Experimental System for Time-Domain Microwave Breast Imaging Emily Porter; Adam Santorelli; Mark Coates; Milica Popovic (McGill University, Canada)</td>
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<td>Hemorrhagic Stroke Detection Via UWB Medical Imaging Elena Pancera (Karlsruhe Institute of Technology, Germany)</td>
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<td>Electromagnetic Focusing in Biological Tissues Wyger M. Brink; Joan E. Lager; Bert Jan Kooij (Delft University of Technology, The Netherlands)</td>
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<td>Regional Estimation of the Dielectric Properties of the Breast: Skin, Adipose, and Fibroglandular Tissues Douglas Kurran; Elise Fear (University of Calgary, Canada)</td>
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<td>09:00 - 10:40</td>
<td>Room: N1</td>
<td>CP04: COST 2100: From channel models to channel impacts on wireless communications (part1)</td>
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<td>Chairs: Christian Ibars (Centre Tecnologic de Telecommunications de Catalunya - CTTC, Spain), Alain Sibille (Telecom Paris Tech &amp; ENSTA PARISTECH, France)</td>
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<td>Addressing Challenges in Propagation and Channels in the Networks of the Future Luís M. Correia (IST - Technical University Lisbon, Portugal)</td>
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<td>Wideband Radio Channel Measurements in Rural/Semi-rural and Dense Urban Environments in the 2-6 GHz Band and Applications to WiMAX Standard Sana Salous (University of Durham, United Kingdom)</td>
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<td>Virtual MIMO Performance in a Measured Outdoor-to-Indoor Cellular Scenario Mark Beach (University of Bristol, United Kingdom)</td>
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<td>Impact of Transmit Antenna Beamwidth for Fixed Relay Links Using Ray-Tracing and Winner II Channel Models Nizabat Khan; Claude Oestges (Université catholique de Louvain, Belgium)</td>
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<td>On Simplifying WINNER II Channel Model for MIMO OTA Performance Evaluation Xiang Gao; Buon Kiong Lau; Xiaoguang Wang (Lund University, Sweden) et al.</td>
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<td>09:00 - 10:40</td>
<td>Room: S2</td>
<td>CP12: Propagation in Body Area Networks (part1)</td>
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<td>Chairs: Simon Cotton (Queen's University, Belfast, United Kingdom), Raffaele D’Errico (CEA-LETI, France)</td>
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<td>On the WBAN Radio Channel Modelling for Medical Applications Matti Hämäläinen; Attaphongse Taparugssanagorn; Jari Linatti (University of Oulu, Finland)</td>
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<td>Investigation of Channel Spatial Diversity for Dual-link Cooperative Communications in WBAN Lingfeng Liu (Université catholique de Louvain, Belgium); Vaibhav Bhatnagar (ICTEAM, Université Catholique de Louvain, Belgium) et al.</td>
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<td>Doppler Characteristics and Correlation Properties of On-Body Channels Raffaele D’Errico; Laurent Ouvry (CEA-Leti Minatec, France)</td>
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<td>On-body Diversity Channels At 2.45 GHz: Measurements and Statistical Analysis Asimina Michalopoulou; Theodore Zervas; Kostas Peppas; Fotis Lazarakis (Institute of research &quot;Demokritos&quot;, Greece) et al.</td>
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<td>A New Look At the Body Area Network Channel Model David B Smith; Leif W Hanlen (National ICT Australia, Australia); Tharaka Anuradha Lamahewa (Australian National University, Australia)</td>
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Chair: Ronan Sauleau (University of Rennes 1, France)

Multi-Beam Pillbox Antennas in the Millimeter-Wave Range
Mauro Ettorre; Erio Gandini; Ronan Sauleau
(University of Rennes 1, France)

Active Switched Antenna Array for 77 GHz Digital Beamforming Radar
Peter Feil; Tobias Chaloun (University of Ulm, Germany)

Multi-layer Beamforming Lens Antenna Array with a New Line Design for Millimeter-Wave System-In-Package Applications
W. Lee; Y. S. Kim; J. Kim; Youngjoong Yoon
(Yonsei University in Korea, Korea)

Novel All-Dielectric Mm-Wave Horn Antennas Based on EBG Structures
Irina Khromova; Ramon Gonzalo; Itigo Ederra; Jorge Teniente
(Public University of Navarra, Spain) et al.

Wideband Stacked Patch Antenna Array on LTCC for W-bands
Antti E. I. Lamminen; Jussi Siily (VTT Technical Research Centre of Finland, Finland)

Chairs: Per-Simon Kildal (Chalmers University of Technology, Sweden), Sebastien Lallêchère
(Clermont University, France)

Determination of Maximum Doppler Shift in Reverberation Chamber Using Level Crossing Rate
Xiaoming Chen; Per-Simon Kildal (Chalmers University of Technology, Sweden) et al.

Estimation of Peak Spatial-Average SAR of Inverted F-Antenna on Metal Plate Using Lightweight Phantom Composed of Wave Absorber
Tan Watanabe; Naobumi Michiashita; Yoshihide Yamada
(Yokohama National University, Japan) et al.

Upper Bounds on Fixed-Geometry Wheeler Cap Efficiency Measurements - Part I: System Model and Rectangular Cavities
Constantine G. Kakoyiannou (National Technical University of Athens, Greece)

Upper Bounds on Fixed-Geometry Wheeler Cap Efficiency Measurements - Part II: Spherical and Cylindrical Cavities
Constantine G. Kakoyiannou; Philip Constantinou
(National Technical University of Athens, Greece)

Total Scattering Cross Section Improvements From Electromagnetic Reverberation Chambers Modeling and Stochastic Formalism
Sebastien Lallêchère (Clermont University, France); Ibrahim El Baba; Pierre Bonnet; Françoise Paladian
(Blaise Pascal University, France)

Chairs: Uwe-Carsten G. Fiebig (German Aerospace Center (DLR), Germany), Athanasios D. Panagopoulos (National Technical University of Athens, Greece)

FDTD Channel Modelling with Time Domain Huygens’ Technique
Sema Dumanli (Toshiba Research Europe Ltd., United Kingdom); Chris Raiton; Dominique L. Paul
(University of Bristol, United Kingdom)

Considerations on Cloud Attenuation At 100 and 300 GHz for Propagation Measurements Within the TERASENSE Project
Gustavo Siles; Jose M Riera; Pedro Garcia-del-Pino
(University Politecnica de Madrid, Spain)

Conversion of Evanescent Waves Into Propagating Modes by Passing Through a Metamaterial Prism: An Iterative Approximation Method
Constantinos A. Valagiannopoulos (Aalto University, Finland); Constantin Simovski
(Helsinki University of Technology, Finland)

A Physical Analytical Model for the Connectivity Evaluation of Dual-Polarized Millimeter-Wave Multi-Hop Backhaul Networks
Georgios Pitsiladis; Athanasios D. Panagopoulos; Philip Constantinou
(National Technical University of Athens, Greece)

Feasibility Analysis of Peer-to-Peer Microwave Communications Between Self-powered Miniature Electronic Devices
Dmitriy Penkin; Gerard J.M. Janssen; Alexander Yarovoy
(Delft University of Technology, The Netherlands)

Localization of Active UWB Sensor Nodes in Multipath and NLOS Environments
Guowei Shen; Rudolf Zetik; Honghui Yan; Snezana Jovanoska; Reiner S. Thomä
(TU Ilmenau, Germany)
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<td>11:00 - 12:40</td>
<td>Room: Auditorium</td>
<td>A01: Antenna Interactions and Coupling (part 2)</td>
<td>Chairs: Jesús Rubio (Universidad de Extremadura, Spain), Clement Yann (IETR &amp; Thales Systems Aeroportes, France)</td>
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<tr>
<td>11:00 - 12:40</td>
<td>Room: A</td>
<td>CA24: RFID technologies (COST IC0803/IC0603 special session) part2</td>
<td>Chairs: Apostolos Georgiadis (CTTC, Spain), John Sahalos (Aristotle University of Thessaloniki, GR, Thessaloniki &amp; University of Nicosia, CY, Nicosia, Greece)</td>
</tr>
<tr>
<td>11:00 - 12:40</td>
<td>Room: B</td>
<td>CA07: EurAAP software WG - The future of computational electromagnetics: science or product? (part2)</td>
<td>Chair: Guy A. E. Vandenbosch (Katholieke Universiteit Leuven, Belgium)</td>
</tr>
<tr>
<td>11:00 - 12:40</td>
<td>Room: C</td>
<td>CA01: Innovative array antennas (part2)</td>
<td>Chairs: Gerard Caille (Thales Alenia Space France, France), Giovanni Toso (European Space Agency, The Netherlands)</td>
</tr>
<tr>
<td>11:00 - 12:40</td>
<td>Room: B</td>
<td>CA07: The Maturity of Computational Electromagnetics: Are We There Yet?</td>
<td>Jin-Fa Lee (Ohio State University, USA)</td>
</tr>
</tbody>
</table>

**Tuesday, 12th April**

Lunch Break 12:40 - 14:00

**Tuesday, 12th April**

Wearable Aperture-Coupled Shorted Solar Patch Antenna for Remote Tracking and Monitoring Applications
- Frederick Declercq (Ghent University, Belgium)
- Apostolos Georgiadis (CTTC, Spain)
- Hendrik Rogier (Ghent University, Belgium)

Evaluation for RFID Tag Antennas by Antenna Clearance Based on Power Reflection Coefficient
- Akiko Yamada
- Hiroyuki Arai (Yokohama National University, Japan)

Inkjet Printing of UWB Antennas on Paper Based Substrates
- George S. A. Shaker (University of Waterloo, Canada)
- Amin Rida (Georgia Institute of Technology, USA)

A Post-Processing Approach to the MUSIC Algorithm for 2D Direction Finding
- Nida Sakar (Istanbul Technical University, Turkey)
- Greg Hsiop
- Christophe Craeye (Université Catholique de Louvain, Belgium)

Multiphysics Analysis of Harmonic RFID Tag on Paper with Embedded Nanoscale Material
- Luca Pierantoni (Università Politecnica delle Marche, Ancona, Italy)

A Mutual Coupling in MIMO Antennas with Transceiver Separation
- Mauro Pelosi
- Gert Pedersen (Aalborg University, Denmark)
- Mikaël Knudsen (Infineon Technologies, Denmark A/S, Denmark)

Using Dirty Signal - How to Use or Not to Use Noise Corrupted Signal
- Tetsuki Taniuchi
- Yoshi Karasawa
- Nobuo Nakajima (The University of Electro-Communications, Japan)

Pattern Control of UWB Printed Antenna on Large Ground Plane
- Elham Ebrahimi
- Peter S Hall (University of Birmingham, United Kingdom)
- Oliver Litschke
- Rens Baggen (IMST GmbH, Germany)

Bandwidth Limitations and Optimum Low-band LTE MIMO Antenna Placement in Mobile Terminals Using Modal Analysis
- Aleksander Krewski
- Werner Schroeder (Rhein-Main University of Applied Sciences, Germany)
- Klaus Sohbach (UDE, Germany)

Global Technique Analysis for Reconfigurable Reflectarray Antennas
- Clement Yann
- Renaud Loison
- Raphael Gillard (IETR, France)
- Michèle Labeyrie (Thales Systèmes Aéroportés, France)

The Maturity of Computational Electromagnetics: Are We There Yet?
- Jin-Fa Lee (Ohio State University, USA)

Solving large scale EM problems using FDTD analysis
- Winfried Simon (IMST GmbH, Germany)

Innovation in Computational Electromagnetics At Agilent
- Filip Demyunck (Agilent Technologies, Belgium)

New Developments of the Electromagnetic Data Exchange
- Marco Sabbadini (Esa Estec, The Netherlands)
- Jonas Fridén (Ericsson AB, Sweden)
- Poul Erik Frandsen (TICRA, Denmark) et al.

Minimizing the Number of Sensors in the Synthesis of Shaped Beam Patterns
- Michele D’Urso (SELEX Sistemi Integrati, Italy)
- Tommaso Isernia (University of Reggio Calabria, Italy) et al.

Optimal Combined Amplitude-Density Synthesis of Aperiodic Arrays
- Giovanni Toso
- Piero Angeletti (European Space Agency, The Netherlands)
Tuesday, 12th April

11:00 - 12:40 Room: D
CP01: Antennas and propagation: automotive applications (part2)

Chairs: Thomas Kuerner (Braunschweig Technical University, Germany), Werner Wiesbiek (Karlsruhe Institute of Technology, Germany)

Application of the Finite Volume Time Domain Method for Evaluation and Development of Wideband Automotive Antenna Systems
Hicham Tazi; Thomas F. Eibert (Technische Universität München, Germany); Christoph Ullrich (AUDI AG, Germany)

Extended Solution Methods in FEKO to Solve Actual Antenna Simulation Problems: Accelerated MoM and Windscreen Antenna Modelling
Markus Schick; Ulrich Jakobus; Marlize Schoeman; et al. (EM Software & Systems – S. A. (Pty) Ltd, South Africa)

Measured Channel Capacity of SIMO-UWB for Intra-Vehicle Communications
Fengzhong Qu (Zhejiang University, P.R. China); Jia Li (Oakland University, USA); Liuqing Yang (Colorado State University, USA) et al.

Wireless Link in Complex Environment for Automotive Applications At ISM and UWB Frequencies
Guillermo C Vietti; Gianluca; Mario Orefice (Politecnico di Torino, Italy)

UWB Measurements and Data Analysis in Automotive Scenarios
Rudolf Zetik; Reiner S. Thomà (TU-Illmenau, Germany)

11:00 - 12:40 Room: G1
CA10: Microwave imaging and sensors for medical applications (part2)

Chairs: Ian Craddock (University of Bristol, United Kingdom), Paul Meany (USA)

Microwave Imaging for Medical Applications
Mikael Persson; Xuezhi Zeng; Andreas Fhager (Chalmers University of Technology, Sweden)

Microwave Bone Quality Imaging: Foundational Data
Paul M Meaney; Tian Zhou; Shireen Geimer; Amir Golnabi; Neil Epstein; Keith D. Paulsen (Dartmouth College, USA)

A Planar Microwave Breast Imaging System Based on the Modulated Scattering Technique
Tommy Henriksson (University of Bristol, United Kingdom); Nadine Joachimowicz (Supélec, France) et al.

Development and Testing of a 60-Element UWB Conformal Array for Breast Cancer Imaging
Maciej Klemm; David Gibbine; Jack Leendertz; et al. (University of Bristol, United Kingdom)

Evolution of Antenna Performance for Applications in Thermal Medicine
Paul Stauffer; Paolo Maccarini (Duke University Medical Center, USA)

Tuesday, 12th April

11:00 - 12:40 Room: N1

CP04: COST 2100: From channel models to channel impacts on wireless communications (part2)

Chairs: Christian Ibars (Centre Tecnologic de Telecomunicacions de Catalunya - CTTC, Spain), Alain Sibille (Telecom Paris Tech & ENSTA PARISTECH, France)

A Ray Tracing Based Stochastic Human Blockage Model for the IEEE 802.11ad 60 GHz Channel Model
Martin Jacob; Sebastian Priewe (Technische Universität Braunschweig, Germany); Alexander Maltsev (Intel A/O, Russia) et al.

On the Throughput of an OFDM-based Cellular Optical Wireless System for an Aircraft Cabin
Svilen Dimitrov; Harald Haas (The University of Edinburgh, United Kingdom); Mario Cappitell (EADS Deutschland GmbH, Germany) et al.

On the Packet Error Rate of Correlated Shadowing Links in Body-Area Networks
Paul Ferrand; Jean-Marie Gorce; Claire Goursaud (INSA-Lyon, France)

Characterization of Inter-Pulse Interference and Fading for Ultra-Wideband Systems
Klaus Witrisal (Graz University of Technology, Austria); Marco Pausini (AT4 Wireless, Spain)

Realistic Time Reversal and Spatial Beamforming: An Interference Mitigation Approach
Sondos Aala El Din; Mohamed El-Hadidy; Thomas Kaiser (Leibniz University of Hannover, Germany)

11:00 - 12:40 Room: S2

CP12: Propagation in Body Area Networks (part2)

Chairs: Simon Cotton (Queen’s University, Belfast, United Kingdom), Raffaele D’Errico (CEA-LETI, France)

K-Weight Based Spatial Autocorrelation Model for On-body Communication
Yang; Ommmer Hussain Abbasi; Akram Alomainy; Yang Hao (Queen Mary, University of London, United Kingdom)

Novel Ultra-Wideband Antennas for In-Body Wireless Communication and Medical Imaging Applications
Akinola Eesuola; Yifan Chen; Guiyun Tian (Newcastle University, United Kingdom)

An Experimental Study on the Impact of Human Body Shadowing in Off-Body Communications Channels At 2.45 GHz
Simon Cotton; Adrian McKernan; Ameenulla Jahabar Ali; William G. Scanlon (Queen’s University Belfast, United Kingdom)

Body Motion and Channel Response of Dynamic Body Area Channel
Takahiro Aoyagi; Iswandi; Minsok Kim; Jun-ichi Takada (Tokyo Institute of Technology, Japan) et al.

A Tapped Delay Line Model of Ground Reflection for UWB MS-MIMO Body Area Networks
Stéphane van Roy (Université libre de Bruxelles, Belgium); Claude Oestges (Université catholique de Louvain, Belgium) et al.

On the Separability of “On-body” and “Off-body” Clusters in the Modeling of UWB WBAN Channels for Various Indoor Scenarios
Christophe Robin (ENSTA ParisTech, France)

Lunch Break 12:40 - 14:00
Tuesday, 12th April

11:00 - 12:40 Room: N3
CA13: Millimeter-wave & integrated antennas and systems (part 2)

Chair: Ronan Sauleau (University of Rennes 1, France)

60-GHZ Antipodal Fermi Antenna on PCB Mei Sun (I2r, Singapore); Xianming Qing; Zhi Ning Chen (Institute for Infocomm Research, Singapore)

60-ghz Post-wall Waveguide Aperture Antenna with Directors Made by Multilayer Pcb Process Hiroshi Nakano; Yasutake Hirachi (AMMSYS Inc., Japan); Ryosuke Suga; Jiro Hirokawa; Makoto Ando (Tokyo Institute of Technology, Japan)

Accurate Characterisation of a 60 GHz Antenna on LTCC Substrate Christos Oikononopoulos-Zachos (IMST GmbH, Germany); Diane Titz (LEAT-CNRS, France) et al.

V-band (57-66GHz) Planar Antennas for WPAN Applications Dmitry E Zelenchuk; Vincent Fusco (Queen’s University Belfast, United Kingdom); George Goussetis (Reader, United Kingdom)

11:00 - 12:40 Room: N2
M01: Wireless systems antenna measurements (part 2)

Chairs: Per-Simon Kildal (Chalmers University of Technology, Sweden), Sebastien Laléchère (Clermont University, France)

Arbitrary Fading Emulation Using Mode-Stirred Reverberation Chambers with Stochastic Sample Handling Juan Sánchez-Heredia (EMITE Ing, Spain); Miguel A. García-Fernández (Technical University of Cartagena, Spain) et al.

Indoor Angular Profile Measurements and Channel Characterization At the Millimeter-Wave Band Nektarios Moraitis (National Technical University of Athens, Greece); Demosthenes Vouyioukas (University of the Aegean, Greece) et al.

Characterization of Integrated Antennas At Millimeter-Wave Frequencies Yan Fu (Université Joseph Fourier, France); Tan Phu Vuong (Grenoble INP, France); Laurent Dussopt (CEA, LETI, France) et al.

Source-Stirred Method for Antenna Efficiency Measurements Yi Huang (University of Liverpool, United Kingdom)

Tuesday, 12th April

11:00 - 12:40 Room: S1
P05: Tropospheric propagation

Chairs: Ana Benarroch (Universidad Politécnica de Madrid, Spain), Ondrej Fiser (Institute of Atmospheric Physics & Fac. of Electrical Engineering and Informatics/Uni of Pardubice, Czech Republic)

From Cumulative NWP Precipitation Data to Small Scale Rain Intensity Distribution: Assessment of a Procedure Carlo Capsoni; Lorenzo Luini (Politecnico di Milano, Italy); Antonio Martellucci (European Space Agency, The Netherlands)

Analysis of Rain Influence on Joint Millimeter and Optical Elevated Links Stanislav Zvanovec; Jiri Libich (Czech Technical University in Prague, Czech Republic)

Phase Delay and Differential Attenuation Due to Rain in Large Phased Array Antennas for Deep-Space Communications At 32 GHz Emilio Mattuccia (Politecnico di Milano, Italy)

Measured and Simulated Fluctuations of Received Power on 11 GHz Terrestrial Path Using Vertical Profiles of Atmospheric Refractivity Martin Grabner; Vaclav Kvicera (Czech Metrology Institute, Czech Republic) et al.

Estimation of Rain Attenuation At Millimetre Waves From Experimental Drop Size Distributions Jose Garcia-Rubia (Universidad de Jaén, Spain); Jose M Riera; Ana Benarroch et al. (Universidad Politecnica de Madrid, Spain)

11:00 - 12:40 Room: S3
P06: UWB channel modeling

Chairs: Simon Cotton (Queen’s University, Belfast, United Kingdom), Raffaele D’Errico (CEA-LETI, France)

Sectorised Radio Channel Characterisation for Ultra Wideband Body-centric Wireless Communications Qammer Hussain Abbasi; Mohammad Monirujjaman Khan; Akram Alomainy et al. (Queen Mary, University of London, United Kingdom)

Time-Domain Modelling of UWB Channel Containing Many Convex Obstacles in Cascade Piotr Górnik; Wojciech Bandurski (Poznań University of Technology, Poland)

Simulated UWB Channel Modelling for Aircraft Andrew Thain (EADS - Innovation Works, France)

Frequency Selectivity in Confined Environments Vit Sipal; Javier Gelabert; Christopher Stevens (University of Oxford, United Kingdom) et al.

Performance Evaluation of Time Reversal in Intra-Vehicular Environment François Bellens; François Quinet; Jean-Michel Dricot; François Horlin (Université Libre de Bruxelles, Belgium) et al.

Lunch Break 12:40 - 14:00
**Tuesday, 12th April**

14:00 - 15:00 **Poster Session I**

**A Circular Polarized Self Tracking L Band Array with High Bandwidth and Scan Beamwidth for Inmarsat BGAN Applications**
Neil Buchanan; Vincent Fusco; Dmitry E Zelenchuk (Queen’s University of Belfast, United Kingdom)

**Antenna Control Using EBG**
Mohd Saari Mohamad Isa; Richard Langley; Salam Khamas (University of Sheffield, United Kingdom)

**Integrated Photonic Antenna Unit for Dual WLAN Band Applications**
Yevhen Yashchyshyn (Warsaw University of Technology, Poland)

**Dual-Band Frequency Tunable Planar Inverted F Antenna**
Issa Ellergani (University of Bradford, United Kingdom); Abubakar Sadig Hussaini (Instituto de Telecomunicaciones, Portugal) et al.

**Design and Integration of UWB Antennas for High Data Rate Miniature Impulse Radio Transmitter**
Ali Chami (Université Nice Sophia Antipolis, France); Olivier Fourquin (University of Aix-Marseille I, France) et al.

**Dual Mode Helix Antenna for Wideband Terrestrial and GPS L2 Communications**
Sultan Shoab (HITEC University, Pakistan); Waqar Shah; Muhammad Amin (Institute of Space Technology, Islamabad, Pakistan) et al.

**Design of a Triple-Frequency Full-Wave Rectenna**
Juan Morcillo-Sánchez (Universidad Carlos III de Madrid, Spain); Vicente Gonzalez-Posadas (Universidad Politecnica de Madrid, Spain) et al.

**Developments on Active Array Antennas**
Antonio Montesano (University of Siena, Italy); Luis de la Fuente; Carlos Montesano (EADS-CASA Espacio, Spain)

**Non - Foster Circuitry Design for Antennas**
Stavros Koulouridis (University of Patras, Greece)

**Equivalent Electrical Circuit Model for Design and Optimization of MEMS-Controlled Reflectarray Phase Shifter Cells**
Farooq Ahmad Tahir (University of Toulouse, France)

**Circularly Polarized Array of Bent Monopoles for L-Band Mobile Satellite Communications**
Aldo Petosa; Soulieth Thirakoune (Communications Research Centre Canada, Canada)

**Automotive Glass Antenna for Worldwide Cellular Phone Coverage**
Matteo Cerretelli; Paolo Facchini; Andrea Notari (ASK Industries S.p.A., Italy); Guido Biffi Gentili (University of Florence, Italy)

**Design and Experiments of 77 GHz Antennas in LTCC Technology**
Dan Neculoiu (IMT Bucharest, Romania)

**Dual-Multilayer PIFA for Wideband Signals**
Guillermo C Vietti; Gianluca Dassano; Mario Oreife (Politecnico di Torino, Italy)

**A Fast Switching Antenna Diversity System for Improved Mobile Reception of Digital Radio Signals of a Geostationary Satellite**
Simon Senega; Stefan Lindenmeier (Universität der Bundeswehr, Germany)

**Multibeam Network Design and Measurement for Triangular Array of Three Radiating Elements**
Javier Garcia-Gasco Trujillo; Manuel Sierra Perez (Universidad Politecnica de Madrid, Spain) et al.

**Efficient Optimization of Reconfigurable Parasitic Antenna Arrays Using Geometrical Considerations**
Prabhat Baraiya (University of Massachusetts Dartmouth, USA); Samee Ur Rehman; Jon Wallace (Jacobs University Bremen, Germany)

**Optical Design of the Stratosphere-Troposphere Exchange and Climate Monitor Radiometer (STEARM) Instrument**
Mark Whale (University of Bern, Switzerland)

**Blanking the Abnormal Direction Finding Errors Caused by Wave Surface Distortion**
Eugene Kondakov (Southern Federal University, Russia)

**Loop Antenna Design for in Vivo Localized Exposure At 2.45 GHz**
Andrea D’Attis (ICEaN “Sapienza” University of Rome, Italy) et al.

**Vital Signs Detection Using Doppler Radar and Continuous Wavelet Transform**
Abubakar Tariq; Hooshang Shiraz (University of Birmingham, United Kingdom)

**Microwave Focusing Algorithms for Breast Cancer Detection: A Comparison for a 2D Simplified Scenario**
Raffaele Solimene (Second University of Naples, Italy); Giuseppe Ruvio (Dublin Institute of Technology, Ireland) et al.

**Feasibility Study of an Ultra Wideband Pseudo-Noise-Radar for Medical Applications**
Xuyang Li (Karlsruhe Institute of Technology, Germany)

**Microchip Set-Up for Real Time Studies of Biological Structures in Presence of Electromagnetic Fields**
Paolo Marracino (La Sapienza University, Rome, Italy)

**Analysis of Temporal Compression Characteristics Using Active Phase Conjugation in Systems with Multiple Antenna Elements**
Pei Xiao (University of Surrey, United Kingdom); Vincent Fusco; Padmini Sundaralingam (Queen’s University Belfast, United Kingdom)

**Mutual Coupling Reduction Between Closely-Packed MIMO PIFA Arrays**
Qian Li; Alexandros Feresidis (Loughborough University, United Kingdom); Pei Xiao (University of Surrey, United Kingdom); Vincent Fusco (Padmini Sundaralingam (Queen’s University Belfast, United Kingdom)

**Compact Broadband-Optimized Two Element MIMO Antenna System for 2.5 - 2.7 GHz**
Vladimir Ssorin (Lobachevsky State University, Russia); Alexey Arshenkov (The University of Nizhny Novgorod, Russia) et al.

**Reuse of the Mobile Communication Antenna for FM Reception**
Cristina Picher; Jaume Anguera; Aurora Andújar; Carmen Borja; Carles Puente (Fruactus, Spain); Sungtek Kang (University of Incheon, Korea)

**Analysis of a Complex Waveguide Structure for Microwave Wideband Low-Cross-Polar Aperture Antenna**
Kathy Camila Cardozo Oinaski Senhorini (Federal University of Tocantins, UFT, Brazil); Jose R. Bergmann (PUC-Rio, Brazil) et al.

**Multilayer Frequency-Selective-Surface Reflector for Constant Gain Over Ultra Wideband**
Y. Ranga (Macquarie University, Australia); Ladislau Matekovits (Politecnico di Torino, Italy) et al.

**Broadband Bowtie Antenna for RF Energy Scavenging Applications**
Fabrizio Congedo; Giuseppina Monti; Mario Cannarile (University of Salento, Italy); Luciano Tancione (University of Lecce, Italy)

**2x2 Dual Linear Polarization Wideband Slot Array**
Jorge R. Costa (Instituto de Telecomunicacoes / ISCTE-IUL, Portugal); Eduardo B. Lima (Instituto de Telecomunicacoes, Portugal) et al.
Fundamental Characteristics of a Strip Folded Dipole Antenna with a Feed Line on the Dielectric Substrate
Junnymoong Kim (National Defense Academy, Japan)

A Dual-Band Circularly Polarized Monopole Antenna for WLAN Application
Samaneh Esfandiarpour; Hamid Reza Hassani; Ali Frotaunpour (Shahed University, Iran)

Resonator Type and Positioning Study for the Creation of a Potentially Reconfigurable Frequency Notch in a UWB Antenna Return Loss
Symeon Nikolaou (Frederick Research Center, Cyprus); Miloš Davidovič (University of Belgrade, Serbia) et al.

A Novel Broadband Quasi-Complementary Fractal Antenna
Hossein Farahani (K. N. Toosi University of Technology, Iran)

A Compact Coplanar-fed Monopole for Broadband Applications
Rosa De Paolis; Giuseppina Monti; Luciano Tarricone; Valeria De Paolis (University of Salento, Italy)

A Tapered Design of a CRLH-TL Leaky Wave Antenna
Onofrio Losito; Michele Gallo (Politecnico di Bari, Italy); Vincenzo Dimiccoli (ITEL Telecomunicazioni S.r.l., Italy) et al.

Dual-Polarized Log.-Periodic Antenna on a Conical MID Substrate
Christian Orlob; Quang Huy Dao; Daniel Kornek (Leibniz Universität Hannover, Germany)

Ultra Wideband Printed Monopole Antenna with Dual-Band Circular Polarization
Mohsen Khalily; Mohamad Kamal A. Rahim; Muhammad Ramlee Kamarudin; Masoumeh Shaneshin (University Technology Malaysia, Malaysia) et al.

Pulse Response Behavior of a UWB Antenna with Switchable Band-Notching Feature
Alexander Vasylchenko (CSEM SA, Switzerland); Rostyslav Dubrovka (Queen Mary, University of London, United Kingdom) et al.

An Ultrawideband Antenna for FMCW-Radar Positioning Systems
Gabor Vinci (University of Erlangen-Nuremberg, Germany)

A Planar Ultrawideband Antenna with Multiple Controllable Band Notches for UWB Cognitive Radio Applications
Mohammed Al-Husseini; Ali Ramadan (American University of Beirut, Lebanon); Youssef Tawk (University of New Mexico, USA) et al.

Tri-Band Antenna for WLAN 802.11 a/n, b/g/n and y (A Generic Planar Antenna Design Approach)
Muhammad Amir Yousuf (Ecole Polytechnique - ParisTech, France); Christophe Robin (ENSTA ParisTech, France)

Design of a High-Gain Low-Profile Wideband Stacked DRA for C-Band
Murilo Moraes; Luciano Prado de Oliveira (University of Campinas, Brazil); Joao Moreira; Edson Reis (Orbisat, Brazil) et al.

A Concept for a Broadband Electromagnetic Band Gap (EBG) Structure
Amir Zaghloul (Virginia Polytechnic Institute and State University, USA); Sandeep Palreddy (Virginia Tech, USA) et al.

An Ultra Wide-Band System for RF Energy Harvesting
Aniello Buonanno; Michele D’Urso (SELEX Sistemi Integrati, Italy) et al.

Wideband Active Interference Cancellation Techniques for Military Applications
Georg Karawas; Kavita Goverdhanam; James Koh (US Army, USA)

A Compact Reconfigurable Single/Dual Band Antenna for Wireless Communications
Hocine Kmnouche (EMF, Algeria)

Tuesday, 12th April

A Pattern Reconfigurable Antenna with Switching Function of Shape and Direction
Dassake Uchida; Hiroyuki Arii (Yokohama National University, Japan); YoungJoong Yoon (Yonsei University in Korea, Korea)

A Polarization Reconfigurable Slot Antenna
Ali Ramadan; Mohammed Al-Husseini; Karim Youssef Kabalan; Ali El-Haj (American University of Beirut, Lebanon) et al.

Design of a Reconfigurable Antenna for Ground Penetrating Radar Applications
Nicola Romano (Second University of Naples, Italy); Francesco Soldovieri (CNR, Italy); Raffaele Persico (IBAM-CNR, Italy)

An Alternative Energy Source for Low Power Autonomous Sensors
Vlad Marian (Ecole Centrale de Lyon, France)

Effects of On-PCB Location of Radiating Element on the Performance of Mobile Terminal GPS Antennas in Multipath Environment
Masoud Ur Rehman; Xiaodong Chen; Clive Parini (Queen Mary, University of London, United Kingdom) et al.

Size Reduction of RFID Antenna for Cable Indentification Application
Tin Komljenovic; Zvonimir Sipus (University of Zagreb, Croatia)

Radiation Quality Factor of Spherical Antennas with Material Cores
Troels V. Hansen; Oleksiy S. Kim; Olav Breinbjerg (Technical University of Denmark, Denmark)

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Radiation Quality Factor of Spherical Antennas with Material Cores
Troels V. Hansen; Oleksiy S. Kim; Olav Breinbjerg (Technical University of Denmark, Denmark)
Matching Evanescent Open-Ended Waveguide Antennas Using the Imaginary Smith Chart
Peter Ludlow; Vincent Fusco (Queen’s University Belfast, United Kingdom)

Slot Planar Antenna on Metallic Support with Large Bandwidth
Christophe Morlaas (ENAC, France)

An Operational Modified-LINC Demonstrator for Wireless Surveillance
Fatna Benahmed Daho (University of Limoges, France)

TDMA X-Band FMCW MIMO Radar for Short Range Surveillance Applications
Francesco Belfiori (Delft University of Technology, The Netherlands)

Study on the Variation in Dielectric Properties of Heterogeneous Substrates Composed of Nanomaterials
Chinwe Njoku; William Whittow; J (Yiannis) Vardaxoglou (Loughborough University, United Kingdom)

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Chinwe Njoku; William Whittow; J (Yiannis) Vardaxoglou (Loughborough University, United Kingdom)

15:00 – 16:20 Room: Auditorium
Invited lectures

Space Antennas challenges and proposed ways forward: An ESA Perspective
Cyril Mangenot

Inkjet-Printed RFID and Wireless Sensor Nodes: The Final Step to Bridge Cognitive Intelligence, Nanotechnology and RF?
Manos Tentzeris

15:00 – 16:20 Room: A
Invited lectures

MIMO Wireless Propagation: Modern Channel Characterization for Emerging Applications
Michael A. Jensen

De-embedding of antennas from propagation channel in wireless communications
Jun-Ichi Takada

Coffee Break 16:20 - 16:40
<table>
<thead>
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<th>Time</th>
<th>Room</th>
<th>Session</th>
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<tr>
<td>16:40 - 18:20</td>
<td>B</td>
<td>A04: MIMO, smart and signal processing antennas I</td>
<td>Chairs: Ting-Wei Kang (National Sun Yat-Sen University, Taiwan), Patrick Van Torre (University College Ghent, Belgium)</td>
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<td>C</td>
<td>A05: Beamforming, data processing and multiple beam antennas I</td>
<td>Chairs: Andrew Hellicar (CSIRO ICT Centre, Australia), Harmen Schippers (National Aerospace Laboratory NLR, The Netherlands)</td>
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<td>D</td>
<td>A06: Automotive antennas</td>
<td>Chairs: Ziqiang Tong (Johannes Kepler University Linz, Austria), Francesca Vipiana (Istituto Superiore Mario Boella (ISMB), Italy)</td>
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<td>N1</td>
<td>A07: Mobile communication I</td>
<td>Chairs: Anders Derneryd (Ericsson AB &amp; Lund University, Sweden), David Marpaung (University of Twente, The Netherlands)</td>
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**Site-Specific Evaluation of a MIMO Channel Capacity for Multi-antenna Mobile Terminals in Proximity to a Human Hand**
Bin Abdullah Al-Hadi Azremi; Katsuyuki Haneda; Pertti Vainikainen (Aalto University, Finland)

**Performance Analysis of a Reconfigurable Antenna System for MIMO Communications**
John Kountouriotis (Drexel University, USA); Daniele Piazza (Adant, Italy); Kapil Dandekar (Drexel University, USA) et al.

**Ambiguity Analysis of Isolation-Based Multi-antenna Structures on Mobile Terminal**
Bin Abdullah Al-Hadi Azremi (Aalto University, Finland); Mario Costa; Visa Koivunen (Helsinki University of Technology, Finland) et al.

**Internal Handset Antenna Array for LTE/WWAN and LTE MIMO Operations**
Ting-Wei Kang; Kin-Lu; Ming-Fang Tu (National Sun Yat-sen University, Taiwan)
Tuesday, 12th April

Chairs: Juraj Bartolic (University of Zagreb, Croatia), Giuseppe Di Massa (University of Calabria, Italy)

Multiple Sources Discrimination by Array Processing
Giuseppe Di Massa; Sandra Costanzo (University of Calabria, Italy); Gaspare Galati (Tor Vergata University, Italy)

A Multi-Polarization and Multi-Frequency Single Layer Planar Antenna
Mayumi Matsunaga; Kenji Kakemizu; Massimo Candotti (Ehime University, Japan) et al.

Design of a Dual-Band Rejected UWB Printed Monopole Antenna
Imen Ben Trad; (SysCOM Laboratory, ENIT, Tunis, Tunisia); Hatem Rmili (ISSAT Mahdia, Tunisia); Jean-marie Floch (IETR, France) et al.

A Low Cross Polarization 5 GHz-Band 3-Stacked Meander-Line Antenna Integrated with a Meander-Line Shape Balun
Satoshi Yoshida; Shoichi Tanifuji; Suguru Kameda; Noriharu Suematsu; Tadashi Takagi; Kazuo Tsubouchi (Tohoku University, Japan)

Design of an Inverted F Antenna by Using a Transmission Line Model
Michèle Gallo; Onofrio Losito (Politecnico di Bari, Italy); Vincenzo Dimiccoli (1ITEL Telecomunicazioni S.r.l., Italy) et al.

Chairs: Vito Lancellotti (Technical University of Eindhoven, The Netherlands), Zvonimir Sipus (University of Zagreb, Croatia)

Mode-Matching Formulation of a Conducting Wedge with a Corrugated Cylindrical Tip
Anastasis C Polycarpou; Marios Christou (University of Nicosia, Cyprus)

A Hybrid Projective Method for Analysis of Electromagnetic Scattering From a Doubly Periodic Dielectric Structure
Sergei Skobelev (Company "Radiophyzika", Russia)

Dispersion and Attenuation Analysis of Substrate Integrated Waveguides by Driven Eigenproblem Computation
Huanlei Chen; Cassten H Schmidt; Thomas F. Eibert (Technische Universität München, Germany) et al.

Rigorous Determination of the Modal Spectrum for Multilayered Structures Through a Simple Closed-Form Approach
Guido Valerio; Alessandro Galli (Sapienza University of Rome, Italy); David Jackson (University of Houston, USA)

FEM Eigenmode Solver for EBG Band Diagram Computation
Romain Garnier (Université Paul sabatier Toulouse 3, France)

Radiofrequency and Microwave Bioelectromagnetic Interactions: State of the Art and Future Perspectives
Carmela Marino; Paolo Galloni; Vanni Lopresto; Caterina Merla (ICEmB at ENEA, Research Center Casaccia, UT BIORAD, Italy)

European Cooperation Projects
Mirjana Moser (Federal Office of Public Health, Switzerland)

Exposure Systems for Bioelectromagnetic Investigations in the Radiofrequency Range: Classification and Emerging Trends
Alessandra Paffi (Sapienza University of Rome, Italy); Francesca Apollonio (ICEmB at "Sapienza" University of Rome, Italy) et al.

Detection of permeabilisation obtained by micropulses and nanopulses by means of bioimpedance of biological tissues
Lluis M Mir (UMR 8203 CNRS-Institut Gustave-Roussy, France)

Combined Effects Induced in Biological Systems by Exposure to EMF and Chemical or Physical Agents
Maria Rosaria Scarfi (CNR, Italy)
Tuesday, 12th April

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<td>Chairs: Francesco D’Agostino (University of Salerno, Italy), Hakan Eriksson (Saab Electronic Defence Systems, Sweden)</td>
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<td>Chairs: Reiner Hoppe (AWE Communications, Germany), Yves Lostanlen (SIRADEL, Canada)</td>
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**The CDT Ultra Wide-Band Anechoic Chamber**
Jose Manuel Serna; Félix Tercero; Timothy Finn; José Antonio López (IGN Spain, Spain)

**Signature Measurements in Monostatic and Bistatic SAR Configuration**
Helmut Essen; Manfred Haegelen; Sebastian Hantscher (Fraunhofer-FHR, Germany); Alfred Wahlen; Gunnar Briese (FGAN-FHR, Germany) et al.

**Electrical Alignment of Antenna Coordinate System in a Planar Near-Field Setup**
Anders Mynster (DELTA A/S, Denmark); Jeppe Nielsen; Sergey Pivnenko (Technical University of Denmark, Denmark)

**RCS Measurement Results for Automotive Related Objects At 23-27 GHz**
Tom Schipper; Lars Reichardt; Thomas Zwick (Karlsruhe Institute of Technology (KIT), Germany)

**Surrogate Optimization of Indoor Radio Coverage**
Lajos Nagy (Budapest University of Technology and Economics, Hungary)

**Prediction of Range, Power Consumption and Throughput for IEEE 802.11n in Large Conference Rooms**
Frederic Heereman; Wout; Emmeric Tanghe; Luc Martens (Ghent University, Belgium); David Plets (IBBT-Ghent University, Belgium)

**Automatic Network Optimization and Dynamic Network Management Using a Propagation Prediction Tool in a Living Lab Setting**
David Plets (IBBT-Ghent University, Belgium); Wout Joseph; Kris Vanhecke; Luc Martens (Ghent University, Belgium)

**Optimization of Single Frequency Networks for DVB-T Services Using SA and PSO**
Marta Lanza; Angel Luis Gutiérrez; Iván Barriuso; Marta Domingo; Jesús Ramón Pérez et al. (University of Cantabria, Spain)

**Analysis of the Mast Contribution to the Scattering Pattern of Wind Turbines in the UHF Band**
Itziar Angulo; David de la Vega; Olatz Grande; David Guerra; Pablo Angueira (University of the Basque Country, Spain)
Wednesday, 13th April 09:00 - 10:40 Room: Auditorium
A11: New materials, meta-materials, EBG structures I (part 1)

Chairs: Thomas Bertuch (Fraunhofer FHR, Germany), Filiberto Bilotti (University Roma Tre, Italy)

Compact Multi-frequency Metamaterial-Inspired Antenna
Iñigo Liberal; Iñigo Ederra; Ramon Gonzalo (Public University of Navarra, Spain)

Analytical Modelling of Amorphous Glass-coated Microwires for Microwave Applications
Iñigo Liberal; Iñigo Ederra; Ramon Gonzalo (Public University of Navarra, Spain)

Analysis of Anomalous Extraordinary Transmission Through Metallic Arrays
Miguel Berue; Miguel Navarro-Cia; Vitaliy Lomakin (University of California, San Diego, USA) et al.

Wide Angle Negative Refraction in Fishnet Metamaterials
Miguel Berue; Miguel Navarro-Cia; Mario Sorolla (Universidad Publica de Navarra, Spain)

Stacked Cut-Off Hole Arrays for Lens Antennas At Subterahertz Frequencies
Miguel Navarro-Cia; Miguel Berue; Mario Sorolla (Universidad Publica de Navarra, Spain)

Coffee Break 10:40 - 11:00

Wednesday, 13th April 09:00 - 10:40 Room: A
A12: Array antennas II (part 1)

Chairs: Amedeo Capozzoli (Università di Napoli Federico II, Italy), Luca Salghetti (European Space Agency-ESTEC, The Netherlands)

Experimental Results on a Planar Array of Parasitic Dipoles Fed by Only One Active Element
Marcos Álvarez-Folgueiras; Juan Rodríguez-González; Francisco Ares-Pena (University of Santiago de Compostela, Spain)

Design and Realization of a New Antenna for Localization with RFID
Tan Phu Vuong (Grenoble INP, France)

Future Architectures for ESA Deep Space Ground Stations Antennas
Mario Fornaroli (Callisto Ltd., France)

A Wideband Conformal Antenna Array for Cognitive Radio/MIMO Applications
Jagath Kumar Halpe Gamage; Bengt Holter; Irene Jensen; Karsten Husby; Jacob Kuhnle (SI\textsc{nef} ICT, Norway)

Asymmetric Array Elements for Symmetric Scan Performance
Hans Steyskal (c/o Air Force Research Laboratory, USA)

A Novel 3D Printed Focusing Probe in Scattering-type Scanning Near-field Millimetre & Terahertz Wave Microscope
Bin Zhu (Vrije Universiteit Brussel, Belgium); Sam A Vanloocke (University of Ghent, Belgium); Johan Stiens (VUB, Belgium) et al.

Collimating and Resonant Properties of Two-Shell Radially Symmetric Lenses
Artem V. Boriskin (IRE NASU, Ukraine); Alexander Vorobyov; Ronan Sauleau (University of Rennes 1, France)

Wide Band Hat-Fed Reflector Antenna for Satellite Communication
Erik G. Geterud; Jian Yang (Chalmers University of Technology, Sweden); Tomas Ostling (Arkivator AB, Sweden)

Beam Steerable Quartz Integrated Lens Antenna for 60 GHz Frequency Band
Alexey Artemenko (The University of Nizhny Novgorod, Russia); Alexander Maltsev (Intel A/O, Russia) et al.

A New Metal-Rod-Supported Hat Antenna for Potentially Combining with the Eleven Antenna as a Dual-Band Feed for Reflectors
Jian Yang; Wei Wei (Chalmers University of Technology, Sweden); Tomas Ostling; Thomas Schafer (Arkivator AB, Sweden)

Optimization of Matching Circuits for Antennas
Jussi Rahola (Optenni Ltd, Finland)

Coffee Break 10:40 - 11:00

Wednesday, 13th April 09:00 - 10:40 Room: D
A13: Reflector and lens antennas (part 1)

Chairs: Aki Karttunen (Aalto University, Finland)

A Novel 3D Printed Focusing Probe in Scattering-type Scanning Near-field Millimetre & Terahertz Wave Microscope
Bin Zhu (Vrije Universiteit Brussel, Belgium); Sam A Vanloocke (University of Ghent, Belgium); Johan Stiens (VUB, Belgium) et al.

Dual-Band Annular-Ring Microstrip Antenna with Bow Tie Shaped Aperture Coupling
Mónica Ramírez (Autonomous University of Barcelona, Spain); Josep Parrón (Universitat Autonoma de Barcelona, Spain)

A New UWB Radar System Using UWB CMOS Chip
Yinan Yu; Sohaib Maalik; Jian Yang; Tomas McKelvey (Chalmers University of Technology, Sweden) et al.

A Dual Polarized Low Profile UWB Antenna for Building Material Analysis
Dorothea Sturtz; Heiko Braun; Martin Pohlmann (Robert Bosch GmbH, Germany) et al.

Novel UWB Low-Profile Sinuous Slot Antenna
Antonio Manna; Paolo Baldonero; Fabrizio Trotta (Elettronica S.p.A., Italy)
Wednesday, 13th April

09:00 - 10:40 Room: B
CA14: Terahertz Antennas & Systems (part 1)

Chairs: Luis Jofre (UPC, Spain), Nuria Llombart (Universidad Complutense de Madrid, Spain)

Broadband and Multispectral Response of Planar Antennas for Terahertz Security Screening
Erich Grossman (NIST, USA)

A Focal-plane Array of Dielectric Rod Antennas for THz Imaging
Stephen M Hanham (Imperial College London, United Kingdom); Trevor S. Bird (Antengenuity, Australia)

Silicon Based Antennas for THz Integrated Arrays
Nuria Llombart (Universidad Complutense de Madrid, Spain); Bertrand Thomas (JPL, USA); Maria Alonso (UPC, Spain) et al.

Silicon Field Effect Transistors for Terahertz Detection and Imaging
Wojciech Knap (University Montpellier 2 and CNRS, France)

Sub-Millimetre Wave Material Characterization
Elena Saenz; Luis Rolo; Maurice Paquay (European Space Agency, The Netherlands) et al.

09:00 - 10:40 Room: C
CA02: Antennas for space applications (part 1)

Chairs: Yan Brand (Eutelsat S. A., France), Laszló-Rudolf Kis (Intelsat Corporation, USA), Cyril Mangenot (European Space Agency, The Netherlands)

Antenna Requirements as Seen by an Operator
Hector T. Fenech; Alessia Tomatici; D. Serrano; Emmanuel Lance (Eutelsat S.A., France); Maria Kalama (Eutelsat S.A., France)

Multi-beam Phased Arrays for Communication Satellites
Michael Wheidan (The Boeing Company, USA)

Thales Alenia Space France Antennas: Recent Achievements for Telecommunications
Jean-Christophe Lafond; Philippe Lepeltier; Jacques Maurel; Eric Vourch; Claude Labourdette et al. (Thales Alenia Space, France)

A Dual Circular Combined K/Ka-Band RF Sensing Feed Chain for Multi Beam Satellite Antennas
Enrico Reiche; Simon J Stirland (Astrium Ltd, United Kingdom); Christian Hartwanger (EADS Astrium GmbH, Germany) et al.

A Summary of Recent Developments in Satellite Antennas At MDA
Eric Amyotte; Yves Demers; Virginie Dupessey; Michel Forest; Louis Hildebrand; Aiping Liang et al. (MDA, Canada)

09:00 - 10:40 Room: G1
CA04: Numerical Methods for Challenging Multi-Scale Problems (part 1)

Chairs: Francesco Andriulli (Ecole Nationale Superieure des Telecommunications de Bretagne (TELECOM Bretagne), France), Giuseppe Vecchi (Politecnico di Torino, Italy)

Fast Fourier Transform Accelerated Multilevel Green’s Function Interpolation for Mixed Potential and Direct Field Surface Integral Equations
Dennis T. Schobert; Thomas F. Elbert; Carsten H. Schmidt (Technische Universität München, Germany)

A New Highly Accurate Time Integration Scheme for DG-FEM
Melin Liu; Hakan Bagci (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)

Fast Integral Equation Solver Strategies with Implicit Matrix Vector Product Evaluation for Planar-3D Structures
Thomas Vaupel (Fraunhofer FHR, Germany)

Supercomputer Solutions of Extremely Large Problems in Electromagnetics: From Ten Million to One Billion Unknowns
Jose M. Taboada; Luis Landesa (University of Extremadura, Spain); Marta G. Araújo; José Bertolo; (University of Vigo, Spain) et al.

New computational strategies for electromagnetic modeling of multiscale heterogeneous composites
Zhen Peng; Jue Wang; Feiran Lei; Jin-Fa Lee (Electroscience Lab., The Ohio State University, USA)

09:00 - 10:40 Room: N1
CP08: COST IC0802: Channel modelling for radio systems from L to W band (part 1)

Chairs: Laurent Castanet (ONERA, France), Antonio Martellucci (European Space Agency, The Netherlands)

Radiowave Propagation Modelling for ITU and WRC Regulatory Activities
Sergio Buonomo (ITU, Switzerland); Bertram Arbesser Rastburg (ESA - Estec, The Netherlands)

Clustering of the Multipath Radio Channel Parameters
Susana Mota; Armando C Rocha (University of Aveiro, Portugal); Maura Garcia; Fernando Pérez-Fontán (University of Vigo, Spain)

Statistical and Physical-Statistical Modeling of the Land Mobile Satellite, LMS, Channel At Ku- and Ka-Band
Fernando Pérez-Fontán (University of Vigo, Spain); Nicolas Jeannin; Laurent Castanet; Mametsa (ONERA, France) et al.

Propagation Modelling and Mapping of Rain, Clouds and Water Vapour to Cope with Spatial and Temporal Variability
Aldo Paraboni; Carlo Riva; Carlo Capsoni; Lorenzo Lurì (Politecnico di Milano, Italy); Laurent Castanet; Nicolas Jeannin (ONERA, France) et al.

Synergic Use of EO, NWP and Ground Based Data for the Characterisation of Water Vapour Field
Nazzareno Pierdicca (Uni Roma1, Italy); Fabio Rocca (Politecnico di Milano, Italy); Bjorn Rommen (Estec, The Netherlands) et al.

Coffee Break 10:40 - 11:00
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<td>CM02: Fast Antenna Near Field Measurements Techniques (AMTA session) part1</td>
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<td>Chairs: Lars Jacob Foged (SATIMO, Italy), Carlo Rizzo (Tecnologica Ltd., United Kingdom), Manuel Sierra-Castañer (Technical University of Madrid, Spain)</td>
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<td>Fresnel Zone to Far Field Algorithm for Rapid Array Antenna Measurements</td>
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<td>Manuel Sierra-Castañer (Technical University of Madrid, Spain); Sara Burgos (Antenna Systems Solutions, Spain)</td>
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<td>Spherical Near Field Measurements with Truncated Scan Area</td>
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<td>Enrica Martini; Stefano Maci (University of Siena, Italy); Lars Jacob Foged (SATIMO, Italy)</td>
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<td>A New Method to Reduce Truncation Errors in Partial Spherical Near-Field Measurements</td>
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<td>Francisco José Cano (Technical University of Madrid, Spain); Sergej Pivenko (Technical University of Denmark, Denmark)</td>
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<td>Positioning Errors Compensation in the NF - FF Transformation with Helicoidal Scanning for Long Antennas: Experimental Tests</td>
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<td>Electric Dipole Based Synthetic Data Generation for Probe-Corrected Near-Field Antenna Measurements</td>
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<td>Carsten H Schmidt; Dennis T. Schobert; Thomas F. Eibert (Technische Universität München, Germany)</td>
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<td>Chairs: Vittorio Degli-Esposti (University of Bologna, Italy), Saul Torrico (Comsearch &amp; The George Washington University, USA)</td>
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<td>CP07: Mobile propagation and scattering from buildings and vegetation (part1)</td>
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<td>Radioelectric Propagation in a Deciduous Tree Forest At Wireless Networks Frequency Bands</td>
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<td>Jose Antonio Gay Fernandez; Inigo Cuiñas; Manuel Garcia Sánchez (Universidade de Vigo, Spain)</td>
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<td>A Propagation Prediction Model in Vegetated Residential Environments - A Simplified Analytical Approach</td>
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<td>Simulation of Fading Statistics in Hilly/Mountainous Terrain</td>
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<td>Frequency Characteristics of Angular Spread for Radio Wave Propagation Through Foliage</td>
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<td>Chaymaly Phakasoum; Mir Ghoraiishi; Jun-ichi Takada (Tokyo Institute of Technology, Japan); Koshito Kitao; Tetsuo Imai (NTT DoCoMo, Japan)</td>
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<td>An assessment of complex scattered electric field through building facade homogenization</td>
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<td>Shermila Mostarshedi; Elodie Richalo; Odile Picont (Université Paris-Est (Marne-la-Vallée), France); Joe Wiart (France Telecom R&amp;D, France)</td>
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<td>09:00 - 10:40</td>
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<td>CA19: Transformation electromagnetics (part1)</td>
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<td>Ultra-Directive Emission Made by Transformation Optics</td>
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<td>Three-Dimensional Metamaterial Lens Antennas</td>
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<td>Cloaking a Reflector Antenna Using Coordinate Transformation Approach</td>
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<td>The Transform of Geometry in Space and Its Application in Reconfigurable PIFA Antenna</td>
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<td>Duc Nguyen (1Laboratory LAHC, Institute Microelectronic Electromagnetic and Photonic, Grenoble INP-Minatec, France) et al.</td>
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<td>Tensor Transmission-Line Metamaterials and Their Applications</td>
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<td>Gurkan Gok; Anthony Grbic (University of Michigan, Ann Arbor, USA)</td>
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<td>Microwave Non-Destructive Evaluation of Corrosion in Reinforced Concrete Structures</td>
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<td>Absolute Field Strength Measurements of Slotted Enclosures Using an Electro-Optical Field-Sensor</td>
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<td>Lena A. Thiele; Robert Geise (Technische Universität Braunschweig, Germany)</td>
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<td>Retrieving Half-Space Fresnel Coefficients by Multistatic GPR Data</td>
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<td>Contactless Measurement Method for Integrated mm-Wave Antennas</td>
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<td>Ulf Johanssen (Eindhoven University of Technology, The Netherlands); Marco Spirito (Delft University of Technology, The Netherlands) et al.</td>
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<td>Radar Target Identification of Mining Infrastructure for Automated Mine Machinery Navigation</td>
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<td>Chad Hargrave (CSIRO, Australia)</td>
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Wednesday, 13th April
### 11:00 - 12:40 Room: Auditorium

**A11:** New materials, meta-materials, EBG structures (part 1)

**A12:** Array antennas (part 2)

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**Chairs:** Filiberto Bilotti (University Roma Tre, Italy), Nader Engheta (University of Pennsylvania, USA)

**Cylindrical Active Coated Nano-Particles Excited by Electric and Magnetic Line Sources**
Samel Arslanagic (Technical University of Denmark, Denmark)

**Microstrip Gain Enhancement Using Left Handed Metamaterial Structure**
Mohamad Kamal A. Rahim; Farid Zubir; Huda A. Majid (Universiti Teknologi Malaysia, Malaysia)

**Radiation Efficiency Improvement of Dual Band Patch Antenna Based on a Complementary Rectangular Split Ring Resonator**
Noelia Ortiz; Francisco Falcone; Mario Sorolla (Universidad Publica de Navarra, Spain)

**Comparative Study of the Integral Equation Formulations When Analyzing Left-Handed Materials**
Marta G. Araújo (Universidade de Vigo, Spain); Javier Rivero; Jose M. Taboada; Luis Landesa (University of Extremadura, Spain) et al.

**Bandwidth Analysis of Lumped-element-based Planar Anisotropic Cloak**
Silvio Hrabar; Iva Malic (University of Zagreb, Croatia)

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**Design of a Low-Profile Printed Array of Loaded Dipoles with Inherent Frequency Selectivity Properties**
Daniele Cavallo (TNO, The Netherlands); Silvio Savoia (University of Sannio, Italy); et al.

**Direction Dependent Antenna Modulation Using a Two Element Array**
HongZhe Shi; Alan Tennant (University of Sheffield, United Kingdom)

**New Circularly Polarized Slot Radiator for Substrate Integrated Waveguide (SIW) Planar Array**
Jose Luis Masa-Campos (Universidad Autonoma de Madrid, Spain); Manuel Sierra-Perez (Universidad Politecnica de Madrid, Spain) et al.

**Unusual Tapering of Leaky-Wave Radiators and Their Applications**
Jose-Luis Gómez-Tornero (Polytechnic University of Cartagena, Spain)

**Analysis of Microstrip Patch Antenna Array Integrated with Mushroom-Like EBG for 5.8 GHz**
Mohd Nor Md Tan (University Technology Mara, Malaysia); Tharek Abdul Rahman (Wireless Communication Centre, Malaysia) et al.

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**Wednesday, 13th April**

### 11:00 - 12:40 Room: A

**A11:** New materials, meta-materials, EBG structures (part 1)

**A12:** Array antennas (part 2)

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**Chairs:** Filiberto Bilotti (University Roma Tre, Italy), Nader Engheta (University of Pennsylvania, USA)

**Cylindrical Active Coated Nano-Particles Excited by Electric and Magnetic Line Sources**
Samel Arslanagic (Technical University of Denmark, Denmark)

**Microstrip Gain Enhancement Using Left Handed Metamaterial Structure**
Mohamad Kamal A. Rahim; Farid Zubir; Huda A. Majid (Universiti Teknologi Malaysia, Malaysia)

**Radiation Efficiency Improvement of Dual Band Patch Antenna Based on a Complementary Rectangular Split Ring Resonator**
Noelia Ortiz; Francisco Falcone; Mario Sorolla (Universidad Publica de Navarra, Spain)

**Comparative Study of the Integral Equation Formulations When Analyzing Left-Handed Materials**
Marta G. Araújo (Universidade de Vigo, Spain); Javier Rivero; Jose M. Taboada; Luis Landesa (University of Extremadura, Spain) et al.

**Bandwidth Analysis of Lumped-element-based Planar Anisotropic Cloak**
Silvio Hrabar; Iva Malic (University of Zagreb, Croatia)

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**Design of a Low-Profile Printed Array of Loaded Dipoles with Inherent Frequency Selectivity Properties**
Daniele Cavallo (TNO, The Netherlands); Silvio Savoia (University of Sannio, Italy); et al.

**Direction Dependent Antenna Modulation Using a Two Element Array**
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**Lunch Break**

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<td>CA02: Antennas for space applications (part 2)</td>
<td>CA04: Numerical Methods for Challenging Multi-Scale Problems (part2)</td>
<td>CP08: COST IC0802: Channel modelling for radio systems from L to W band (part2)</td>
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<td>Jonatan Aronsson; Vladimir Okhmatoivoski (University of Manitoba, Canada)</td>
<td>Susanne Crewell (Universität Köln, Germany); Frank S. Marzano; Vinia Mattioli (Sapienza University of Rome / Perugia, Italy) et al.</td>
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<td>Study of the Impact to the Beam Isolation From the Reflector Houlddown Holes</td>
<td>Linear Embedding Via Green’s Operators and Arnoldi Basis Functions for Analyzing Complex Structures</td>
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<td>Tahsin Akalin (Université de Lille 1, France); Miguel Beruete; Miguel Navarro-Cia (Universidad Publica de Navarra, Spain) et al.</td>
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<td>Vito Lancellotti; Bastiaan de Hon; Anton G. Tijhuis (Technische Universiteit Eindhoven, The Netherlands)</td>
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<td>Carlo Capsoni (Politecnico di Milano, Italy); Laurent Castanet (ONERA, France); Piero Gabellini (Space Engineering S.p.a., Italy) et al.</td>
<td>Use of Space-Time Channel Models and Data for Design and Control of Adaptive SatCom Systems</td>
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<td>Lars Jacob Foged; Andrea Giacomini; Roberto Morbidini (SATIMO, Italy)</td>
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<td>G/T Estimation For DVB-SH Automotive 2-Port Switchable CP Antennas</td>
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<td>Application of Mathematical Absorber Reflection Suppression to Planar Near-Field Antenna Measurements</td>
<td>Stuart F Gregson; Allen Newell; Greg Hindman; Michael Carey (Nearfield Systems Inc., USA)</td>
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<td>Far Field and Gain Calculation Starting From Near Field Time - Domain Data Acquisition</td>
<td>Rabia Rammal (université de Limoges, France); Michele Lalande; Edson Martinod; Noel Feix (XLIM/OSA, France)</td>
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<td>G. Gougeon; Yves Lostanlen (SIRADEL, Canada); Laurent Maviel (CITI Laboratory, France)</td>
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<td>CP07: Mobile propagation and scattering from buildings and vegetation (part2)</td>
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<td>Radiowaves Scattering from Irregular Building Facades through MoM Analysis</td>
<td>Yelakan Berenger Ouattara; Elodie Richalot; Odile Picon (Université Paris-Est, France); Kubické Gildas (IREENA, France) et al.</td>
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<td>Analysis of Angular Parameters of Dense Multipath Components in an Urban Macro-Cell Scenario</td>
<td>Martin Káske; Reiner S. Thomá (Imenau University of Technology, Germany)</td>
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<td>Parameter Estimation of Delay-Doppler Frequency Power Spectrum for Vehicular Propagation Channels</td>
<td>Xuefeng Yin; Quan Zuo (Tongji University, P.R. China); Zhiming Zhong; Stan X. Lu (Huawei Technology Company, P.R. China)</td>
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<td>Ray-Tracing Evaluation of Diffuse Scattering in an Outdoor Scenario</td>
<td>Francesco Mani; Claude Oestges (Université catholique de Louvain, Belgium)</td>
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<td>Clutter Height Variation and Its Effect on frequency dependence of Radio Path Loss</td>
<td>Dmitry Chizhik (Bell Laboratories, Alcatel-Lucent, USA)</td>
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<td>Chairs: Vittorio Degli-Esposti (University of Bologna, Italy), Sãul Torrico (Comsearch &amp; The George Washington University, USA)</td>
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<td>Practical Realization of Transformation-Optics Designed Invisibility Cloak Through Layered Structures</td>
<td>Yijun Feng (Nanjing University, P.R. China)</td>
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<td>Transformational Plasmonics</td>
<td>Muamer Kadic; Guillaume Dupont (Aix-Marseille University, France); Sébastien Guennneau; Stefan Enoch (CNRS, France)</td>
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<td>Broadband Dielectric Zone Plate Antenna From Transformation Electromagnetics</td>
<td>Rui Yang; Wenxuan Tang; Yang Hao (Queen Mary, University of London, United Kingdom)</td>
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The Effects of Support Structures on Near-Field Exposure Levels for HF Antennas
Yang Fu (University of Sheffield, United Kingdom); Mike Hutt (BBC World Service, United Kingdom) et al.

A Reconfigurable Decoupling and Matching Network for a Frequency Agile Compact Array
Yong Cai (CSIRO, Australia); Y Jay Guo (Wireless Technologies Lab, CSIRO ICT Centre, Australia)

A Consideration of Equivalent Circuit of Magnetic-Resonant Wireless Power Transfer
Hiroshi Hirayama; Yuki Okuyama; Nobuyoshi Kikuma; Kuno Sakakibara (Nagoya Institute of Technology, Japan)

On the Reduction of Mutual Coupling Between Stacked Patches by Exploiting the Properties of the Parasitic Patch
Osric Quevedo-Teruel (Universidad Autónoma de Madrid, Spain); Zvonimir Sipus (University of Zagreb, Croatia)

Mutual Coupling Reduction Between Dual Polarized Microstrip Patch Antennas Using Compact Spiral Artificial Magnetic Conductor
Lila Moufouk; Lana Dama; Xavier Bigaoud; Anne-Claire Lepage (Institut TELECOM, TELECOM ParisTech, France); Hubert Diez (CNES, France)

On Adjusting the Characteristics of a Low-Index Slab Antenna with a Finite Set of Metallic Pins
Constantinos A Valagiannopoulos (Aalto University, Finland)

Design of a Compact H/OH Horn for the Parkes Radio Telescope
Christophe Granet (BAE Systems Australia Ltd, Australia); Mark Bowen; John Reynolds (CSIRO, Australia) et al.

A Compact UWB Passive Balun Solution for Cryogenic 2-13 GHz Eleven Feed for Future Wideband Radio Telescopes
Hasan Raza; Jian Yang (Chalmers University of Technology, Sweden)

Temporal Beam Pattern Stability of a Radio Astronomy Phased Array Feed
Wim van Cappellen (ASTRON, The Netherlands); Marianna Ivashina (Chalmers University of Technology, Sweden)

Reducing the Complexity of the Beam Calibration Models of Phased-Array Radio Telescopes
Oleg Iupikov (Sevastopol National Technical University, Ukraine); Marianna Ivashina (Chalmers University of Technology, Sweden); Oleg Smirnov (ASTRON, The Netherlands)

Corrugated Horn Antenna Noise Temperature Characterisation for the NRL Water Vapor Millimeter-Wave Spectrometer Project
Jorge Teniente (Public University of Navarra, Spain); R. Michael Gomez (Naval Research Laboratory, USA) et al.

Focusing System for a 300 GHz Radar with Two Target Distances
Javier Montero-de-Paz; Oscar Garcia-Perez; Alejandro Rivera-Lavado; Eduardo Ugarte-Muñoz (University Carlos III in Madrid, Spain) et al.

Analytic Techniques for the Design of Correlator Arrays for Remote Sensing and Radio Astronomy
Lorenzo Poli; Matteo Carlin; Paolo Rocca (University of Trento, Italy)

Beam Steering and Adaptive Nulling of Low Sidelobe Level-Time-Modulated Linear Array
Yazhen Tong; Alan Tennant (University of Sheffield, United Kingdom)

Modified Circular Taylor Patterns to Generate Footprint Patterns
Raquel Eirey-Pérez; Marcos Álvarez-Folgueiras; Juan Rodríguez-González et al. (University of Santiago de Compostela, Spain)

ANN Element Characterization for Reflectarray Antenna Optimization
Pedro Robustillo; Jose A. Encinar; Juan Zapata (Universidad Politécnica de Madrid, Spain)

Design and Development of a V-Shaped Printed Dipole Antenna Array for Passive Radar
Peter Knott (Fraunhofer FHR, Germany); Ulrich R.O. Nickel (Fraunhofer FKIE, Germany)

Comparison of Different PSO Initialization Techniques for High Dimensional Search
Angel Luis Gutiérrez; Marta Lanza; Iván Barriuso; Luis Valle; Marta Domingo; Jesús Ramón Pérez et al. (University of Cantabria, Spain)

Comparison of Heuristic Methods When Applied to the Design of Reflectarrays
Iván Barriuso; Angel Luis Gutiérrez; Marta Lanza; Jesús Ramón Pérez; Luis Valle; Marta Domingo et al. (University of Cantabria, Spain)

Shaped-Beam Reconfigurable Reflectarray with Gathered Elements in an Irregular Lattice
Eduardo Carrasco (Universidad Politécnica de Madrid, Spain); Manuel Arrebola (Universidad de Oviedo, Spain) et al.

New Low Loss Inverted Microstrip Line Using Gap Waveguide Technology for Slot Antenna Applications
Elena Pucci; Ashraf Zaman (Chalmers University of Technology, Sweden); Eva Rajo-Iglesias (University Carlos III of Madrid, Spain) et al.

Unequally Spaced Arrays Synthesis Using Self-adaptive Differential Evolution
Sotiris Goudos; Apostolos A Nanos; Theo Samaras; Katherine Siakavara (Aristotle University of Thessaloniki, Greece) et al.

Phase-Only Synthesis of A-Periodic Reflectarrays
Amedeo Capozzoli; Claudio Curcio (Università di Napoli Federico II, Italy) et al.

General Analysis Tool for Reflectarray Antennas in Dual-Reflector Configurations
Carolina Tienda; Jose A. Encinar (Universidad Politécnica de Madrid, Spain); Manuel Arrebola (Universidad de Oviedo, Spain)

A New Iterative Method for Synthesizing Flat-Topped Pattern
Abolfazl Haddadi (Amirkabir University of Technology, Iran); Parastoo Taghikhani (Shahed University, Iran) et al.

Accurate Electromagnetic Modeling of Liquid Crystal Cells for Reconfigurable Reflectarrays
Gerardo Perez-Palominos; Jose A. Encinar; Mariano Barba (Universidad Politécnica de Madrid, Spain)

Design of Rectangular Bismuth Titanate (BiT) Ceramic Array Antenna
Wee Fwen Hoon (Universiti Malaysia Perlis (UniMAP), Malaysia)

Preliminary Results on Tunable Frequency Selective Surface for Beam Steering Transmit-array Applications
Luigi Boccia (Università della Calabria, Italy); Ivan Russo (Universität Ulm, Germany) et al.

Analytically-Designed Multi-Beam Arrays with Predictable Sidelobes
Lorenzo Poli; Paolo Rocca (University of Trento, Italy)

Synthesis of Sub-Arrayed Antennas for Wireless Power Transmission
Paolo Rocca; Giacomo Oliveri; Andrea Massa (University of Trento, Italy)

A New Method for the Prognosis of Scan Blindness Angle in Finite Phased Arrays of Printed Dipolos
Bilgehan Avere; Yukur Erturk (Bilkent University, Turkey)

Performances of Galileo System Navigation Antenna for Global Positioning
Silvia Arenas; Fernando Monjas (EADS CASA Espacio, Spain); Antonio Montesano (University of Siena, Italy) et al.
Dual-antenna System Composed of Patch Array and Planar Yagi-Uda Array Qiang Chen (Tohoku University, Japan); Shiwei Qu (University of Electronic Science and Technology of China, P.R. China) et al.

Novel Method for Using Adaptive Array Antennas in DS-CDMA Mobile Radio Systems Amin Al-Ka’bi (Australian College of Kuwait, Kuwait)

Real-time Adaptive Beam-forming for Vibrating Airborne Antenna Arrays Harmen Schippers; Rasmus Cornelius; Adriaan Hulzinga; Guus Vos (National Aerospace Laboratory NLR, The Netherlands)

Inclined Slot Array Antennas on a Rectangular Coaxial Line Satoshi Yamaguchi (Mitsubishi Electric Corporation, Japan)

Excitation of a Double Corrugation Slow-wave Structure in Terahertz Range Vitaly Zhurbenko (Technical University of Denmark, Denmark); Viktor Krozer (Goethe University of Frankfurt am Main, Germany) et al.

Trade-Offs in Multifaceted Passive Electromagnetic Deflector for the 60 GHz Frequency Band Muhammad Imran Kazim (Technical University of Eindhoven (TU/e), The Netherlands); Matti Herben (Eindhoven University of Technology, The Netherlands)

Water Content Evolution in Leaves Based on the Netherlands) Herben (Eindhoven University of Technology, The Netherlands); Matti Herben (Eindhoven University of Technology, The Netherlands) et al.

Circularly Polarized Multi-Beam Lens Antenna System for High Altitude Platforms (HAPS) Marco Letizia; Jean-François Züircher (École Polytechnique Fédérale de Lausanne, Switzerland) et al.

Design of a Circularly Polarized Patch Antenna Over a Reactive Impedance Substrate Guillaume Chertier (Polytech’Nice, France); Loïc Bernard (ISL, France); Ronan Sauleau (University of Rennes 1, France)

Body Armour with Integral High Impedance Surface Benito Sanz-Izquierdo; Edward Parker; John Batchelor; Jonathan Miller (University of Kent, United Kingdom)

Dynamic Tuning of Electromagnetic Bandgap Dushmanta Thalakotuna (Macquarie University, Australia); Ladiislau Matekovits (Politecnico di Torino, Italy) et al.

A Reconfigurable Miniaturised Split Ring Antenna Over AMC Shaohun Zhu; Kenneth Lee Ford; Alan Tennant; Richard Langley (University of Sheffield, United Kingdom)

Two-dimensional Magnetio-Inductive Wave Data Structures Christopher Chan; Christopher Stevens (University of Oxford, United Kingdom)

Conceptual Implementation of MNG Metamaterial for Reduced Size Rectangular Patch Antenna Md. Zoboraj; Mahdy Chowdhury; Abdullah Ovi; Md. Abdul Matin (Bangladesh University of Engineering and Technology, Bangladesh)

A Review of Mechanically Reconfigurable Antennas Using Smart Material Actuators Shahzad Jalali Mazlouman (Simon Fraser University, Canada); Ailezra Mahanfar (Microsoft Corp., USA); Carlo Menon (SFU, Canada) et al.

Improving Microstrip Filters with Gap Waveguide Packaging Astrid Algeba Brazaile; Ashraf Zaman; Elena Pucci (Chalmers University of Technology, Sweden) et al.

A Low-Profile, Wideband Circularly Polarized Curl Antenna Backed by a Polarization Dependent Reflector Hossein Farahani; Foad Fereidoony (Ms. in K. N. Toosi University of Technology, Tehran, Iran)

The Performance of RFID Antennas on Metamaterial Substrate Onofrio Losito; Michele Bozetti (Politecnico di Bari, Italy); Vincenzo Dimiccoli; Domenico Barletta (HTEL Telecommunications S.r.l., Italy)

Performance of Uniaxial Multilayer Cylinders and Spheres Used for Invisible Cloak Realization Branimir Husic; Tan Komlenovic; Zvonimir Sipus (University of Zagreb, Croatia)

Circular Polarization From a ZOR Patch-Coupled Rectangular Ring-Mushroom Antenna Seongyong Yoo; Sungtek Kahng; Geonho Jang (University of Incheon, Korea); Jaime Anguera (Fractus, Spain)

Application of the Complex Materials for Antenna Synthesis Ivan Petoev; Vasilii Tabatadze (Unknown, Georgia); Revaz Zaridze (Tbilisii State University, Georgia)

Beam-Scanning Antennas Based on Metamaterial Planar Lens Yan Yang (University of Southampton, United Kingdom)

Design of Dual Beam Printed Dipole Antenna Jean Michel Denoual; Jean-marie Floch (IETR, France); Yvan Kokar (IETR-INSa Rennes, France)

Genetic Algorithms for Synthesis or Radiation Patterns in Ring-Reconfigurable Reflectors Julio Gutierrez-Ríos (Universidad Politecnica de Madrid, Spain); Juan Vassallo Sanz (Consejo Superior de Investigaciones Científicas, Spain)

A Conformal UWB Directional Antenna Domenico Gaetanii; Max James Ammann; Patrick McEvoy; Matthias John (Dublin Institute of Technology, Ireland)

Design of Cylindrically Bent Antenna Array on LCP Substrate with Large Coverage At 60 GHz Mingda Huang; Matti Herben (Eindhoven University of Technology, The Netherlands) et al.

Implementation of Single Reflector in a Quad-Yagi Array Antenna Ignacio Antizine; Juan Antonio Roma (University of the Basque Country, Spain)

Bandwidth Enhancement of Microstrip-Fed Slot Radiating Element Using Its Complementary Stub Elena Abdo-Sánchez; Teresa Maria Martín-Guerrero; Carlos Camacho-Penalosa (University of Málaga, Spain) et al.

Design and Performance Analysis of UWB Circular Disc Monopole Textile Antenna and Bending Consequences Shuvashis Dey; Nandita Saha; Subrata Biswas (American International University- Bangladesh, Bangladesh)

Integrable Sleeve Choke for Radiation Improvement of a Printed Monopole Antenna for 2.4-GHz USB-Dongle Applications Saou-Wen Su (Lit-On Technology Corp., Taiwan)

Miniaturized Broadband Planar Feeds for Circularly Polarized Antennas Michel Clenet (DRDC Ottawa, Canada); Yahia Antar (Royal Military College of Canada, Canada)

Substrate-Integrated Waveguide-to-Microstrip Couplers for Integrated-Circuit Antenna Applications Vladimir Labay (Gonzaga University, USA); Jens Bormann (University of Victoria, Canada)

Optically Controlled Switchable Microstrip Filter for the GSM1800 Frequency Band Chinthana J Panagamuwa (Loughborough University, United Kingdom); Ahmed Ezz Eldin (British University in Egypt, Egypt)
Wednesday, 13th April

Computer Tool for the Analysis of the Doppler Spectrum in the Scattered Field by Wind Turbines
Maria Jesús Algar; Lorena Lozano; Iván González-Diego; Felipe Cátedra (University of Alcalá, Spain)

Feasibility Study on Electronically Steerable PDHT Antenna s/s
Roberto Mizzi; Franco Perrini (Thales Alenia Space Italia S.p.a., Italy)

An Omnidirectional Dual-Reflector Antenna with a Shaped Main Reflector Described by Local Conic Sections
Rafael A. Penchel (PUC-Rio, Brazil); Jose R Bergmann (PUC-Rio, Brazil); Fernando Moreira (Federal University of Minas Gerais, Brazil)

A Simultaneous X/Ka Feed System for Reflectors with a F/D Ratio of 0.8
Christophe Granet; Ian Davis; John Kot; Greg Pope; Karl Verran; Tim Mellor (BAE Systems Australia Ltd, Australia)

Multimode Monopulse Tracking Feed with Dual-Band Potential for Land-Mobile Satellite Communications in Ka-Band
Hendrik Bayer; Alexander Krauss; Ralf Stephan; Matthias Hein (Immenau University of Technology, Germany)

Synthesis and Analysis of Omnidirectional Dual-Reflector Antennas: Case of the Main Reflector with Circular Generatrix
Sandro Zang; Jose R Bergmann (PUC-Rio, Brazil)

On the Maximally Sparse Aperiodic Array Design for Space Applications
Theodoros Kaftas; Dimitrios G. Babas; George Marios et al. (Aristotle University of Thessaloniki, GR, Thessaloniki, Greece)

New Compact OMT Based on a Septum Solution
Pablo Sarasa; Marina Diaz-Martin; Jean-Christophe Angevain; Cyril Mangenot (European Space Agency, The Netherlands)

Study of the Π Network as the Compound Slot Equivalent Circuit Model
Ignacio Montesinos-Ortego (Technical University of Madrid, Spain); Manuel Sierra-Perez (Universidad Politécnica de Madrid, Spain) et al.

A Comparison Between the Cases of Electric and Magnetic Sources in the Inverse Source Problem
Claudio Mola (Second University of Naples, Italy); Francesco Soldovieri (CNR, Italy) et al.

Cosecant Squared Pattern Synthesis for Reflector Antenna Using IWO
Alireza Mallahzadeh; Parastoo Taghikhani (Shahed University, Iran); Amirhossein Ghasemi (Université Paris Ouest La Défense, France) et al.

Development of a Closed-Loop Fluidic System for a Phase Reconfigurable Reflectarray Element
Stephen Long; Gregory Huff (Texas A&M University, USA)

Novel Linearly and Circularly Polarized 60 GHz MEMS Antennas on Low- and High-Resistivity Silicon
Esszeldin Soliman (The American University in Cairo, Egypt)

Generation of Circular Polarization with Low-Profile EBG Antenna
Moustapha Salah Toubet (XLIM - UMR 6172 – CNRS, University of Limoges, France); Mohamad Hajj (University of Limoges, France) et al.

15:00 – 16:20 Room: Auditorium
Invited lectures

The "Challenging" World of Terahertz Radiation and Imaging
Lluis Jofre

Miniaturization of Ultra-wideband Antennas
Zhi-Ning Chen

Size-independent Metamaterial Resonators
Piergiorgio Uslenghi

The Art of Higher-Order Probe Correction in Spherical Near-Field Antenna Measurements
Olav Breinbjerg

Coffee Break 16:20 - 16:40

16:40 - 18:20 Room: Auditorium
A15: New materials, meta-materials, EBG structures II

Chairs: Ladislau Matekovits (Politecnico di Torino & Macquarie University, Sydney, Italy), Raj Mittra (Penn State University, USA)

Metadispersion for a Cascade of Planar Periodic Structures
Enrica Martini; Giovanni Maria Sardi; Francesco Caminita; Stefano Maci (University of Siena, Italy)

Flexible Uniplanar Artificial Magnetic Conductor
Maria Elena de Cos; Yuri Álvarez; Ramona Hadarig; Fernando Las-Heras (Universidad de Oviedo, Spain)

Equivalent Circuit Model and Reflection Phase Control Methods for Dual-band AMC
Ji Hwan Yoon; Eun Young Kim; Yohan Lim; YoungHoong Yoon (Yonsei University in Korea)

Influence of Number of Rings on Radiation of CSRR-Loaded Leaky Wave Antenna
Stephanie Eggermont; Ian Davis; John Kot; Greg Pope; Karl Verran; Tim Mellor (BAE Systems Australia Ltd, Australia)

Synthesis and Analysis of Omnidirectional Dual-Reflector Antennas: Case of the Main Reflector with Circular Generatrix
Sandro Zang; Jose R Bergmann (PUC-Rio, Brazil)

A 6-m Mesh Reflector Antenna for SMAP: Modeling the RF Performance of a Challenging Earth-orbiting Instrument
Paolo Focardi (Jet Propulsion Laboratory, USA)

Generation of Circular Polarization with Low-Profile EBG Antenna
Moustapha Salah Toubet (XLIM - UMR 6172 – CNRS, University of Limoges, France); Mohamad Hajj (University of Limoges, France) et al.
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<tr>
<td>16:40 - 18:20</td>
<td>A</td>
<td>A16: Small antennas, RFID tags and sensors I</td>
<td>Richard Langley (University of Sheffield, United Kingdom), Francesco Merli (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland)</td>
<td>Analysis of Using High-Resistance RFID Tag Antennas for Robust Impedance Matching Toni Björninen; Leena Ukkonen; Lauri Tapio Sydänheimo (Tampere University of Technology, Finland) et al.</td>
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<tr>
<td>16:40 - 18:20</td>
<td>B</td>
<td>A17: MIMO, smart and signal processing antennas II</td>
<td>Josef A. Nossek (TU Munich, Germany), Daniele Pinchera (University of Cassino &amp; University of Naples, Federico II, Italy)</td>
<td>Discussion of Statistical Metrics for MIMO OTA Performance Based on Empirical Results Yifei Feng; Jens Jonas; Werner Schroeder (Rhein-Main University of Applied Sciences, Germany) Isolation Improvement Method for Mobile Terminal Antennas At Lower UHF Band Janne Iivonen (Aalto University School of Electrical Engineering, Finland); Otu Kvekäs (Helsinki University of Technology, Finland) et al. Small Radiating Ground Plane with Higher Order Modes Marko Tapani Sonkki (University of Oulu, Finland); Eva Antonino-Daviu; Miguel Ferrando (Politecnico De Valencia, Spain) et al. On the Limits of MIMO Systems: Complete Matrix Model and Intuitive Graphic Representation Daniele Pinchera (University of Cassino, Italy) Printed, Low-Cost, Dual-Polarized Dual-Loop-Antenna System for 2.4/5 GHz WLAN Access Points Saou-Wen Su (Lite-On Technology Corp., Taiwan)</td>
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<tr>
<td>16:40 - 18:20</td>
<td>C</td>
<td>A18: Beamforming, data processing and multiple beam antennas II</td>
<td>Makoto Ando (Tokyo Institute of Technology, Japan)</td>
<td>5x1 Linear Antenna Array for 60 GHz Beam Steering Applications Mikko Kyrö (Aalto University School of Electrical Engineering, Finland); Diane Titz (LEAT-CNRS, France) et al. Implementation of Broadband microstrip-U Coupled Patch Array on Si/BCB Membrane for Beamforming Applications At 60 GHz Amar Adane (Telecom-Bretagne, France) UWB SAR Medical Imaging Via Broadband Minimum Variance Distortionless Response (MVDR) Algorithm Malythe Jalilvand; Elena Pancera (Karlsruhe Institute of Technology, Germany) Design of Multibeam CORPS-BFN for Cellular Mobile Communications Systems Armando Arce-Casas; David H. Covarrubias (CI-CESE, Mexico); Marco Panduro (Mexico) An Effective Approach for Sparse Arrays Design with the Minimum Number of Sensors Giancarlo Prisco; Michele D’Urso (SELEX Sistemi Integrati, Italy)</td>
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<td>16:40 - 18:20</td>
<td>D</td>
<td>A19: Planar and conformal antennas II</td>
<td>Matteo Albani (University of Siena, Italy), Per Ingvarson (RUAG Space AB, Sweden)</td>
<td>Balanced Antipodal Vivaldi Antenna with Novel Transition From Feeding Line to the Flares Hossein Azodi (Lehrstuhl für Hochfrequenztechnik, Germany); Xiaodong Zhuge (Delft University of Technology, The Netherlands) et al. Gain Compensation of a Printed Log Periodic Dipole Array Antenna by Cutting-away the Dielectric Daniel Oloumi (Blekinge institute of Technology, Sweden); Mohammad Mohammadirad (Iran University of Science and Technology, Iran) et al. Optimal Synthesis of Circularly Symmetric Aperture Sources with Shaped Patterns Ovidio Mario Bucci (University of Naples, Italy); Tommaso Isemia (University of Reggio Calabria, Italy) et al. Integrated, Single-Feed, Dual-Polarized Loop Antenna for Compact, Outdoor Access-Point Applications Saou-Wen Su (Lite-On Technology Corp., Taiwan)</td>
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</table>
**Wednesday, 13th April**

**16:40 - 18:20 Room: G1**
A23: Electromagnetic exposures and interactions

Chair: Mark Douglas (ITIS Foundation ETH Zurich, Switzerland)

Experimental System for the Study of Multi-frequency Dosimetry
Marcos Álvarez-Folgueiras (University of Santiago de Compostela, Spain) et al.

Hybridized Axonal Field Model for Signal Estimation in Magnetic Resonance Imaging
Syed Anwar; Greg Cook (University of Sheffield, United Kingdom)

Proposition of Birdcage Coil for 4 T MRI System with No Lumped Circuit Elements
Ryotaro Suga; Kazuyuki Saito; Masaharu Takahashi; Koichi Ito (Chiba University, Japan)

Modeling Signals of Small Tumors Inside the Breast in Ultra-Wide Frequency Band
Nikolai Simonov; Soon Ik Jeon; Seong Ho Son; Jong Moon Lee; Hyuk-Je Kim (ETRI, Korea)

**16:40 - 18:20 Room: N2**
A20: Mobile communication II

Chairs: Naobumi Michishita (National Defense Academy, Japan), Roberto Sorrentino (University of Perugia, Italy)

Evaluation and Analysis of the Hidden Node Margin for Cognitive Radio System Operation in a Real Scenario
Marina Barbiroli (University of Bologna, Italy); Claudia Carciolli (FUB, Italy); Alessandro Guidotti (University of Bologna, Italy) et al.

Wideband Slotted Radiating Ground Plane for Mobile Applications
Eva Antonino-Daviu (Universidad Politecnica de Valencia, Spain); Marko Tapani Sonkk (University of Oulu, Finland) et al.

A Compact and Reconfigurable DVB-H Antenna for Mobile Handheld Devices
Laure Huitema; Tibaud Reveyrand; Cyril Decroze (Xlim, France); Eric Arnaud; Thiery Monediere (University of limoges, France)

Low-sized X-Band Antenna for WiMAX Applications
Maksym Khruslov; Igor Ivanchenko; Nina Popenko (A. Usikov Institute of Radio Physics and Electronics, Ukraine)

Fundamental Study on U-Shape Folded Dipole Antenna for WiMAX
Hisashi Morishita; Nguyen Tuan Hung (National Defense Academy of Japan, Japan)

**16:40 - 18:20 Room: N3**
A21: RCS reduction, prediction, imaging and related theory

Chairs: María Elena de Cos (Universidad de Oviedo, Spain), Andrea Randazzo (University of Genoa, Italy)

Broadband RCS Reduction Using AMC Technology
Juan Carlos Irarate; Jose Luis Martinez de Falcón; Itziar Maestrojusín; Itigo Liberal; Aina Rebollo et al. (Public University of Navarra, Spain)

Design of a Wideband Radar Absorbing Structure
Egemen Yildirim (Aselsan, Turkey); Ozlem Civi (Middle East Technical University, Turkey)

Analytical Estimation
Aritz Estévez; Jesus Illiescas; Antonio Marcotegui (Tafco Metawireless, Spain); Francisco Falcone (University Publica de Navarra, Spain)

Imaging Through Random Media
Ozlem Kilic; Andrew Smith (The Catholic University of America, USA)

RCS Reduction Using a Combination of Artificial Magnetic Conductors
Maria Elena de Cos; Yuli Alvarez; Fernando Las-Heras (Universidad de Oviedo, Spain)

**16:40 - 18:20 Room: S2**
A22: Time domain methods

Chairs: Ioan E. Lager (Delft University of Technology, The Netherlands), Alberto Toccafondi (University of Siena, Italy)

Time-domain Receiving Properties of a Multimode Cylindrical Waveguide Antenna
Ioan E. Lager; Adrianus T De Hoop (Delft University of Technology, The Netherlands)

Application of the Dual-Grid Scheme in BoR-FDTD for the Simulation of Reflector Antennas
Samsul Haimi Dahlan (University Rennes 1, France)

Antenna Source Identification in Time Domain Electromagnetic
Pierre Bonnet (Blaise Pascal University, France)

On the Behaviour of the Electromagnetic Fields At Edges in the Analysis of TM Scattering by Perfectly Conducting Polygonal Cross-Section Cylinders
Gialia Coluccini; Mario Lucido; Gaetano Panariello (University of Cassino, Italy)

A New Robust Technique for Transient Analysis of Conducting Cylinders - TM Case
Zaker Hossein Firoozeh; Rouzbah Moini; Seyed Hossein Hesamedin Sadeghi (Amirkabir University of Technology, Iran) et al.
### Wednesday, 13th April

**16:40 - 18:20 Room: N1**

**CA11: Body Implanted antennas**

- **Chairs:** Xiaodong Chen (Queen Mary, University of London, United Kingdom), Koichi Ito (Chiba University, Japan)

- **Rfid STENTag for Passive Vascular Monitoring**
  - Cecilia Occhiuzzi; Giordano Contrri; Gaetano Marrocco (University of Rome Tor Vergata, Italy)

- **Passive UHF RFID Near Field Link Budget for Implanted Sensors**
  - Christoph Schmidt; Daniel Valderas; Joseba García; Iñaki Ortego (Ceit and Tecnun, University of Navarra, Spain) et al.

- **Design of a Helical Folded Dipole Antenna for Biomedical Implants**
  - Hayato Mizuno; Masaharu Takahashi; Kazuyuki Saito; Nozomi Haga; Koichi Ito (Chiba University, Japan)

- **Beamscanning Probe Antennas for Deep Brain Stimulation**
  - Kin-Fai Tong (UCL, University of London, United Kingdom); Arnaud Dufour (ENSEEIHT, France) et al.

- **Rethinking Antenna Requirements for Medical Implant Systems**
  - William G. Scanlon (Queen’s University Belfast, United Kingdom)

### Wednesday, 13th April

**16:40 - 18:20 Room: S1**

**P08: Propagation for maritime and aeronautical applications**

- **Chairs:** Carlo Riva (Politecnico di Milano, Italy), Michael Schönhuber (Joanneum Research, Austria)

- **Dynamical Evolution of Brillouin Precursors in Multilayered Sea Water-Based Media**
  - Ana Alejos (Universidade de Vigo, Spain); Muhammad Dawood; Jianxiong Sun (New Mexico State University, USA)

- **Computations of the Effects of Wind Turbines in the Close Near Field of RF Installations**
  - Emmanuel H. Van Lil; Jan-willem De Bleser; Antoine Van de Capelle (Katholieke Universiteit Leuven, Belgium)

- **Marine CSEM Scattered Subsurface Response Detection Using Total-Field Scattered-Field FDTD Formulation**
  - Andrea D. Dukeshire (University of Calgary, Canada)

- **Testing Single Frequency GPS Receivers Under Ionospheric Disturbances: A New Approach**
  - Gérardine Artaud (CNES, France); Thomas Junique (M3 SYSTEMS, France); Yoan Gregoire; Christophe Ouzeu (Silicom, France)

- **Heterogeneous Radar Ducting and Radar Performance Due to a Cold Front Advecting Over the Sea of Japan**
  - Robert E. Marshall (NSWCDD, USA)

- **On the Interference Analysis Between Terrestrial Cellular and Multiple Airborne Wireless Networks**
  - Nektarios Moraitis; Athanasios D. Panagopoulos (National Technical University of Athens, Greece)
Thursday, 14th April

09:00 - 10:40 Room: Auditorium
A24: Multiband, wideband, UWB antennas II (part 1)
Chairs: Katsuyuki Haneda (Aalto University, Finland), Jian Yang (Chalmers University of Technology, Sweden)
Bandwidth Enhancement of CRLH Leaky-Wave Antennas
Aita Thior; Xavier Begaud (Institut TELECOM, TELECOM ParisTech, France) et al.
UWB RFID Backscattered Energy in the Presence of Nearby Metallic Reflectors
Francesco Guidi (ENSTA - ParisTech and University of Bologna, France); Alain Sibille (Telecom Paris Tech, France) et al.
Improved Design of an Ultra Wideband Universal Serial Bus Device Mounted Antenna Based on Comparative Radiation Efficiency Measurements
Nuno Pires (Institute of Superior Técnico, Portugal); Marco Lelizà (École Polytechnique Fédérale de Lausanne, Switzerland) et al.
Ultra-Wideband Microstrip Antenna with Coupled Notch Circuit
Marjan Mokhtari (University of Victoria, Canada); Jens Bornemans (University of Victoria, Canada)
Air-gap Standing Parallel Strips Waveguide for X-ray Lithography Fabrication: Characteristics and Antenna Application
Mohammadreza Tayfeh Aligodarz; David Klymysyn; Atabak Rashidian (University of Saskatchewan, Canada)

09:00 - 10:40 Room: A
A25: Reflectarrays (part 1)
Chairs: Jose A. Encinar (Universidad Politécnica de Madrid, Spain), Marco Mussetta (Politecnico di Milano & Politecnico di Torino, Italy)
Folded Reflectarray Antenna Using a Modified Polarization Grid for Beam-Steering
Sabine Dieter; Peter Feil; Wolfgang Menzel (University of Ulm, Germany)
Dual-Reflectarray Antenna for Bidirectional Satellite Links in Ku-Band
Carolina Tienda; Jose A. Encinar (Universidad Politécnica de Madrid, Spain); Simone Montori (RF Microtech, Italy) et al.
Analysis of Printed Reflectarrays Using Extended Local Periodicity
Min Zhou; Stig Sørensen; Erik Jørgensen; Peter Meincke (TICRA, Denmark) et al.
Demonstration of a Gathered Element for Reconfigurable-Beam Reflectarrays Based on Ohmic MEMS
Eduardo Carrasco; Mariano Barba (Universidad Politécnica de Madrid, Spain); Bruno Reig (CEA-LETI, France) et al.
Efficient Electromagnetic Simulation of Periodic Microstrip Reflectarrays
Farooq Ahmad Tahir (University of Toulouse, France)

09:00 - 10:40 Room: B
A26: Millimeter / Sub-millimeter wave and THz technologies I (part 1)
Chairs: Dejan Filipovic (University of Colorado at Boulder, USA), Christos Oikonomopoulos-Zachos (IMST GmbH, Germany)
Folded Reflectarray Antenna Using a Modified Polarization Grid for Beam-Steering
Sabine Dieter; Peter Feil; Wolfgang Menzel (University of Ulm, Germany)
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Efficient Electromagnetic Simulation of Periodic Microstrip Reflectarrays
Farooq Ahmad Tahir (University of Toulouse, France)

09:00 - 10:40 Room: C
CA21: Innovative design and applications of reconfigurable antennas (COST IC0603 ASSIST) part1
Chairs: Christos Christodoulou (University of New Mexico, USA), Julien Perrusse-Carrier (Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Barcelona, Spain)
Front End Optically Reconfigurable Antenna System
Youssef Tawk (University of New Mexico, USA); Joseph Costantine (California State University Fullerton, USA) et al.
Antenna Reconfigurability Based on a Novel Parasitic Pixel Layer
Daniel Rodrigo (Universitat Politècnica de Catalunya, Spain); Yasin Damgaci; Mehmet Unlu; (Utah State University, USA) et al.
End-Switched CRLH Leaky-Wave Antenna with Enhanced Electronic Full-Space Beam Steering Performance
Hoang Nguyen; Samer Abielmona; Christophe Caloz (École Polytechnique de Montreal, Canada)
Equivalent Surface Modelling for Reconfigurable Partially Reflective Surface Antennas
Tomislav Debovogic (University of Zagreb, Croatia) et al.
Novel Wideband Pyramidal Monopole Antenna with Wide Tunable Frequency Band-Notch
Zhen Hua Sampson Hu; Peter S Hall (University of Birmingham, United Kingdom); James Kelly (University of Sheffield, United Kingdom) et al.

Coffee Break 10:40 - 11:00
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<td>CA22: Focusing systems, lenses, and reflectors (part1)</td>
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<td>Room: G1</td>
<td>CA26: European School of Antennas (ESoA) (EurAAP Working Group) part1</td>
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### Thursday, 14th April

**Chairs:** Stefano Maci (University of Siena, Italy), Ronan Sauleau (University of Rennes 1, France)

**Discrete Lenses for Multibeam Applications**
Juan Lizarraga; Gonzalo Crespo; Carlos Del-Río (Public University of Navarra, Spain)

**Compact Shaped Dual-Reflector System for Military Ka-Band SATCOM on the Move**
Ian Davis; John Kot; Christophe Granet; Greg Pope; Karl Verran (BAE Systems Australia Ltd, Australia)

**Optimal Eccentricity of a Low Permittivity Integrated Lens for a High-Gain Beam-Steering Antenna**
Aki Karttunen; Juha Ala-Laurinaho; Antti V. Rääsiänen (Aalto University, Finland); Ronan Sauleau (University of Rennes 1, France)

**Combination of Leaky and CPW Modes for Leaky Lens Antennas with Dual Polarization**
Oscar Quevedo-Teruel (Universidad Autónoma de Madrid, Spain); Andrea Neto (Delft University of Technology, The Netherlands)

**Newfocus Research Networking Program**
Ronan Sauleau (University of Rennes 1, France); Oszkar Biro (Technische Universität Graz, Austria); Johan Stiens (VUB, Belgium) et al.

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<td>CP11: Land Mobile Satellite propagation channel modelling (part1)</td>
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<td>Room: N2</td>
<td>CM03: General Antenna Measurements (AMTA session) part1</td>
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### Thursday, 14th April

**Chairs:** Lars Jacob Foged (SATIMO, Italy), Carlo Rizzo (Tecnologica Ltd., United Kingdom), Manuel Sierra-Castañer (Technical University of Madrid, Spain)

**Land Mobile Satellite Dual Polarized MIMO Channel Along Roadside Trees: Modeling and Performance Evaluation**
Michael Cheffena (University Graduate Center - UNIK, Norway); Fernando Pérez-Fontán (University of Vigo, Spain) et al.

**Influence of Receiver Position on Building Penetration Loss At 5.0 GHz for High Elevation Angles**
Milan Kvicera; Pavel Pechac (Czech Technical University in Prague, Czech Republic)

**On the Small Scale Modelling Aspects of Dual Circular Polarised Land Mobile Satellite MIMO Channels in Line of Sight and in Vehicles**
Tim Brown; Argynios Kyrgiatzos (University of Surrey, United Kingdom)

**Numerical Analysis of the Impact of Building Face Features on LMS Channel Modelling**
Mehdi Ait-Ighil; Joel Lemorton (ONERA, France); Fernando Pérez-Fontán (University of Vigo, Spain) et al.

**Physical-Statistical Model for the LMS Channel At Ku/Ka Band**
Nicolas Jeannin; Laurent Castanet (ONERA, France)

**Solving the Dispersion Problem for Broadband Imaging Cameras**
Andrea Neto (Delft University of Technology, The Netherlands)

**On the Small Scale Modelling Aspects of Dual Circular Polarised Land Mobile Satellite MIMO Channels in Line of Sight and in Vehicles**
Tim Brown; Argynios Kyrgiatzos (University of Surrey, United Kingdom)

**Low Frequency Analysis of Large Dual Reflector Compact Ranges**
Josef Migl; Alexander Geise; Hans-Juergen Steiner (Astrium GmbH, Germany); Juergen Hartmann (EADS Astrium, Germany)

**Electromagnetic Model of a Near-Field Cable-Free Impedance and Gain Measurement Technique for Electrically Small Antennas**
Jiaying Zhang; Sergey Pivnenko; Olav Breinbjerg (Technical University of Denmark, Denmark)
Thursday, 14th April

09:00 - 10:40 Room: N3
CP06: Multi-dimensional propagation models for next generation systems (part1)
Chair: Claude Oestges (Université catholique de Louvain, Belgium)

Polarimetric Analysis of the MIMO-UWB Channel in Laboratories
Concepcion Garcia-Pardo; Maria Martinez-Quinto; Maria Teresa Martinez-Ingles et al. (Universidad Politecnica de Cartagena, Spain)

Parameterization of the COST 2100 MIMO Channel Model in Indoor Scenarios
Juho Poutanen; Katsuyuki Haneda (Aalto University, Finland); Lingfeng Liu; Claude Oestges (Université catholique de Louvain, Belgium)

Scheduling Multi-User MIMO Communication Based on Physical Channel Parameters
Yan Shi (Brigham Young University, USA); Michael Jensen (Brigham Young University, USA)

A New Deterministic Hybrid Model for Indoor- To- Outdoor Radio Coverage Prediction
Dmitry Umansky (University of Lyon, France); Guillaume de la Roche (University of Bedfordshire, United Kingdom) et al.

Accuracy of Specular Path Estimates with ESPIRT and RiMAX in the Presence of Measurement-based Diffuse Multipath Components
Davy Gaillot (University of Lille, France); Emmeric Tanghe (Ghent University, Belgium); Paul Stefanut (University of Lille, France) et al.

09:00 - 10:40 Room: S2
CA27: On-Body Wearable Antennas (part1)
Chair: Gaetano Marrocco (University of Rome Tor Vergata, Italy)

Passive RFID-based Localization System for First Responders
Emidio Di Giampaolo (University of L’Aquila, Italy)

Harvesting RF Energy with a Paper-based Rectenna
Manos M. Tentzeris (Georgia Institute of Technology, USA); Hiroshi Nishimoto (The University of Tokyo, Japan)

Electromagnetic Tracking of Transceiver-free Targets in Wireless Networked Environments
Federico Viani; Paolo Rocca; Giacomo Oliveri; Andrea Massa (University of Trento, Italy)

Theory and Experimentations of Multi-chip RFID Tags
Gaetano Marrocco; Stefano Caizzone (Università di Roma Tor Vergata, Italy)

Electrical Property Characterization of Blood Glucose for On-body Sensors
Tuba Yilmaz; Yang Hao (Queen Mary, University of London, United Kingdom)

09:00 - 10:40 Room: S3
CA25: Sensor Networks: Pervasive Electromagnetics for Sensing and Tracking (part1)

Performance of Site Diversity Technique Estimated From Time Diversity
Carlo Capsoni; Michele D’Amico; Carlo Riva (Politecnico di Milano, Italy); Roberto Nebuloni (Ieiit - Cnr, Italy)

A Tool for Synthesizing Rain Attenuation Time Series in LEO Earth Observation Satellite Downlinks At Ka Band
Pantelis-Daniel Arapoglou (University of Luxembourg, Luxembourg) et al.

Long Term Rain Rate and Ka-Band Attenuation Variability in Aveiro
Armando C Rocha (U. Aveiro / IT Aveiro, Portugal); Cláudia Camacho (University of Aveiro, Portugal)

Simulation of Outage for 21-GHz Band Satellite Broadcasting System Using Frequency Scaling of Measured Rain Attenuation
Susumu Nakazawa (NHK, Japan)

Mixture Weibull Model Applied to the Cumulative Distribution of Rainfall Induced Attenuation in Tropical Brazil
Erasmus Miranda (Catholic University of Petropolis, Brazil); Marlene S Pontes (Pontifical Catholic University of Rio de Janeiro, Brazil) et al.

09:00 - 10:40 Room: S1
P10: Propagation for fixed satellite services

Chairs: Frederic Lacoste (CNES, France), Robert J Watson (University of Bath, United Kingdom)

Performance of Site Diversity Technique Estimated From Time Diversity
Carlo Capsoni; Michele D’Amico; Carlo Riva (Politecnico di Milano, Italy); Roberto Nebuloni (Ieiit - Cnr, Italy)

A Tool for Synthesizing Rain Attenuation Time Series in LEO Earth Observation Satellite Downlinks At Ka Band
Pantelis-Daniel Arapoglou (University of Luxembourg, Luxembourg) et al.

Long Term Rain Rate and Ka-Band Attenuation Variability in Aveiro
Armando C Rocha (U. Aveiro / IT Aveiro, Portugal); Cláudia Camacho (University of Aveiro, Portugal)

Simulation of Outage for 21-GHz Band Satellite Broadcasting System Using Frequency Scaling of Measured Rain Attenuation
Susumu Nakazawa (NHK, Japan)

Mixture Weibull Model Applied to the Cumulative Distribution of Rainfall Induced Attenuation in Tropical Brazil
Erasmus Miranda (Catholic University of Petropolis, Brazil); Marlene S Pontes (Pontifical Catholic University of Rio de Janeiro, Brazil) et al.
Thursday, 14th April

11:00 - 12:40 Room: Auditorium
A24: Multiband, wideband, UWB antennas II (part 2)

Chairs: Katsuyuki Haneda (Aalto University, Finland), Jian Yang (Chalmers University of Technology, Sweden)

Optimization of Frequency-Independent UWB Inverted-Hat Antenna Using Genetic Algorithm Jing Zhao; Dimitris Psychoudakis; Chi-Chih Chen; John L. Volakis (Ohio State University, USA)

Configuration Requirements for Log-Periodic Array Antennas Jian Yang (Chalmers University of Technology, Sweden)

Investigation of Backfire Monofilar Helical Antenna Thomas Smith; Niels Larsen; Ulrich Gothelf (Thrace and Thrane, Denmark) et al.

Compact High-Gain Short-Horn Antenna for UWB Applications Y. Ranga; Karu Esselle (Macquarie University, Australia); Andrew R Weily (CSIRO ICT Centre, Australia) et al.

Design of Triple-Band Dipole-Type Antenna with Dual-Band Artificial Magnetic Conductor Structure Maisarah Abu; Mohamad Kamal A. Rahim; Osman Ayop; Farid Zubir (Universiti Teknologi Malaysia, Malaysia)

11:00 - 12:40 Room: A
A25: Reflectarrays (part 2)

Chairs: Jose A. Encinar (Universidad Politecnica de Madrid, Spain), Marco Mussetta (Politecnico di Milano & Politecnico di Torino, Italy)

Design and Characterization of 2-bit Passive Unit-Cells and Transmit-Arrays in X-Band Antonio Clemente; Laurent Dusslof (CEA, LETI, Minatec, France); Ronan Sauleau (University of Rennes 1, France) et al.

Robust 2-bit Dual-Linearly-Polarised Unit-Cell for Reflectarray Applications Roger Pereira; Raphael Gillard (IETR, France); Ronan Sauleau (University of Rennes 1, France) et al.

Validation of Concentric Square Rings Backscattering for Reflectarray Applications Guillermo C Vietti; Paola Pirinoli; Mario Orefice (Politecnico di Torino, Italy); Marco Mussetta (Politecnico di Milano, Italy)

Reflectarray Antennas with Accurate Calculation of Phase Shifts Yasser Abdallah; Cyrille Menudier; Marc Thevenot; Thierry Monedrie (XLIM-UMR 6172-CNRS, University of Limoges, France)

On Cross-Polarization in Spiraphase-Type Reflectarrays with Elements Based on Ring Slot with Loaded Stubs Alexander Martynyuk (Universidad Nacional Autonoma de Mexico, Mexico) et al.

11:00 - 12:40 Room: B
A26: Millimeter / Sub-millimeter wave and THz technologies I (part 2)

Chairs: Dejan Filipovic (University of Colorado at Boulder, USA), Christos Oikonomopoulos-Zachos (IMST GmbH, Germany)

Wideband W-band Patch Antenna Hongyu Zhou (University of Colorado, USA); Nathan Sutton (University of Colorado, USA); Dejan Filipovic (University of Colorado at Boulder, USA)

Dielectric Horn Antennas in the Terahertz Band Belen Andres-Garcia; Luis-Enrique Garcia-Muñoz (University Carlos III of Madrid, Spain); et al.

Parasitic Mode Suppression Techniques for Shielded Fabry-Perot Cavity Antennas Shoaih Muhammad; Ronan Sauleau (University of Rennes 1, France); Hervé Legay (Thalès Alenia Space, France)

Recent Developments and Recommendations for Improving Harmonic Radar Tracking Systems Nazifa Tahir; Graham Michael Brooker (University of Sydney, Australia)

Electrically Tunable Liquid Crystal Phase Shifter in Antipodal Finline Technology for Reconfigurable W-Band Vivaldi Antenna Array Concepts Markus Koeberle; Matthias Hoefer; Mo Chen; Andreas Penirschke; Rolf Jakoby (Technische Universität Darmstadt, Germany)

11:00 - 12:40 Room: C
CA21: Innovative design and applications of reconfigurable antennas (COST IC0603 ASSIST) part2

Chairs: Christos Christodoulou (University of New Mexico, USA), Julien Perruisseau-Carrier (Centre Tecnologico de Telecomunicaciones de Catalunya (CTTC), Barcelona, Spain)

Active Parasitic Arrays for Low Cost Compact MIMO Transmitters Bo Han (Aalborg University & Athens Information Technology, Greece); Vassil Barousis (University of Piraeus, Greece) et al.

Reconfiguration and Thermoregulation using Biologically Inspired Vascular Networks Franklin Drummond; Gregory Huff (Texas A&M University, USA)

An Electronically Tunable Half-Mode Substrate Integrated Waveguide Leaky-Wave Antenna Asaneh Suntivis; Sean V Hum (University of Toronto, Canada)

Design of Reconfigurable Compact Antennas for Automotive Communications Javier Araque Quijano (Universidad Nacional de Colombia, Colombia); Sergio Arianos (Politecnico di Torino, Italy) et al.

Lunch Break 12:40 - 14:00
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<td>Chairs: Stefano Maci (University of Siena, Italy), Ronan Sauleau (University of Rennes 1, France)</td>
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<td>G1</td>
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<td>Chairs: Stefano Maci (University of Siena, Italy), Dirk Manteuffel (University of Kiel, Germany)</td>
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<td>Vitaliy Bulygin (A.Y. Usikov Institute of RadioPhysics and Electronics, Kharkov, Ukraine)</td>
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<td>Marko Bosiljevac (University of Zagreb, Croatia); Massimiliano Casaletti; Francesco Caminita (University of Siena, Italy) et al.</td>
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<td>Double-shell Modified Extended Hemispherical Lens Feed for Reflectors in Scanning Applications</td>
<td>Carlos A. Fernandes; Eduardo B. Lima; Jorge R. Costa (Instituto de Telecomunicaciones / ISCTE-IUL, Portugal)</td>
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<td>An Aperiodic Active Lens for Multibeam Satellite Applications: From the Design to the Breadboard Manufacturing and Testing</td>
<td>Gianfranco Ruggerini (TeS Teleinformatica e Sistemi (A Space Engineering Company), Italy) et al.</td>
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<td>Jeppe Nielsen; Sergey Pivnenko; Olav Breinbjerg (Technical University of Denmark, Denmark)</td>
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<td>Per-Simon Kildal (Chalmers University of Technology, Sweden); Stefano Maci (University of Siena, Italy) et al.</td>
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<td>Effects of Using a Low-Cost COTS Antenna in Close Proximity to the Body</td>
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<td>Chairs: Frederic Lacoste (CNES, France), Fernando Pérez-Fontán (University of Vigo, Spain)</td>
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<td>Daniel Arndt (Fraunhofer Institute for Integrated Circuits, Germany); Alexander Ihlow (Ilmenau University of Technology, Germany) et al.</td>
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<td>Laurent Le Coq (University of Rennes 1, France)</td>
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<td>Menahem Naor; Victoria Koblinsky (RAFAEL Advanced Defence Systems Ltd, Israel)</td>
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11:00 - 12:40 Room: N3
CP06: Multi-dimensional propagation models for next generation systems (part2)

Chair: Claude Oestges (Université catholique de Louvain, Belgium)

Large-Scale Parameters of Wideband MIMO Channel in Urban Multi-Cell Scenario
Milan Narandžić; Christian Schneider; Martin Käske (Ilmenau University of Technology, Germany) et al.

Impact of Path Loss and Delay Spread on Base Station Cooperation
Konstantinos Manolakis; Stephan Jäckel (Fraunhofer-Institute for Telecommunications, Heinrich-Hertz-Institut, Berlin, Germany) et al.

Channel Measurement and Characterization of Interference Between Residential Femto-cell Systems
Xiang Gao (Lund University, Sweden); Andres Alayon Glazunov (KTH - Royal Institute of Technology, Sweden) et al.

The Diffuse Multipath Component and Channel Stability in Space
Dana Porrat (The Hebrew University, Israel)

11:00 - 12:40 Room: S2
CA27: On-Body Wearable Antennas (part2)

Chair: Gaetano Marrocco (University of Rome Tor Vergata, Italy)

The Effective Electrically Small Encapsulated Antenna Applied for Communication Between Self-powered Miniature Devices
Dmitriy Penkin; Alexander Yarovoy; Gerard J.M. Janssen (Delft University of Technology, The Netherlands)

Real Time Estimation of Motion and Range of RFID Tags
Urmila Pujare (Pennsylvania State University, USA)

Novel RFID-based Electromagnetic System for Medicine Monitoring and Tracking
Harish Rajagopalan (University of California Los Angeles (UCLA), USA)

Design, realization and measurement of micro-magnetic radiators inside pipes filled with water
Luca Cisoni; Riccardo Stefanelli (Politecnico di Torino - Xem Labs, Italy); Daniele Trinchero (Politecnico di Torino, Italy)

OTA Throughput Testing of Multi-Antenna Terminals by Using StarMIMO Test Range
Alessandro Scannavini; Lars Jacob Foged; Nicolas Gross (SATIMO, France)

Radiation Characteristics on Fading Generator Using Scattering Objects
Ryo Yamaguchi (NTT DoCoMo, Inc., Japan)

11:00 - 12:40 Room: S3
CA25: Sensor Networks: Pervasive Electromagnetics for Sensing and Tracking (part2)

Chair: Sergey Pivnenko (Technical University of Denmark, Denmark), Hans-Juergen Steiner (Astrium GmbH & Measurement Technology, Germany)

Near/Farfield Measurements of a Polarisation Agile Phased Array At Ku-Band
Rens Baggen (IMST GmbH, Germany); Stefano Vaccaro; Daniel Llorens del Rio (JAST, Switzerland); et al.

Precise Element Field Measurement for Phased Array Calibrations
Toru Takahashi (Mitsubishi Electric Corporation, Japan)

New Calibration Method Used for Active Phased Array Antennas
Thomas Lambard (I.E.T.R., France); Herve Jeuland (ONERA, France); Olivier Lafond (IETR, France) et al.

OTA Throughput Testing of Multi-Antenna Terminals by Using StarMIMO Test Range
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Radiation Characteristics on Fading Generator Using Scattering Objects
Ryo Yamaguchi (NTT DoCoMo, Inc., Japan)

11:00 - 12:40 Room: S1
M04: Phased-array and adaptive antenna testing

Chair: Sergey Pivnenko (Technical University of Denmark, Denmark), Hans-Juergen Steiner (Astrium GmbH & Measurement Technology, Germany)

Near/Farfield Measurements of a Polarisation Agile Phased Array At Ku-Band
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Ryo Yamaguchi (NTT DoCoMo, Inc., Japan)
### Thursday, 14th April

#### 14:00 - 15:00 Poster Session III

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<td>Milica Rančić; Predrag Rančić (University of Niš, Serbia)</td>
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<td>Tomasz A. Linkowski; Piotr Slobodzian (Wrocław University of Technology, Poland)</td>
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<td><strong>Extending a Hybrid FEBI-MLFMM-UTD Method to Treat Dielectric Objects with the Boundary Integral Method</strong></td>
<td>Nicola Staffolani (Fraunhofer Institut for High Frequency Physics and Radar Techniques FHR, Germany)</td>
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<td><strong>A New Accurate and Efficient Analysis of the Electromagnetic Scattering by a Perfectly Conducting Rectangular Plate</strong></td>
<td>Giulia Coluccini; Mario Lucido (University of Cassino, Italy)</td>
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<td>Pavel Hazdra; Milosav Capek; Jan Eichler; Pavel Hamouz; Milos Mazanek (Czech Technical University in Prague, Czech Republic)</td>
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<td>Boris Panchenko (Radio Engineering Institute, Ural State Technical University, Yekaterinburg, Russia) et al.</td>
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<td>Eliseo Garcia (Alcala University, Spain)</td>
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<td>Ana Alejos (Universidade de Vigo, Spain); Muhammad Dawood (New Mexico State University, USA) et al.</td>
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<td>Rohit Chandra; Anders Johansson (Lund University, Sweden)</td>
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<td>Takayuki Sasamori (Akitaka Prefectural University, Japan)</td>
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**Short-Term and Long-Term Fading of In-Body to Out-Of-Body Channel in MICS Band**

Somayeh Chamaani (K. N. Toosi University, Iran); Yury I. Nechayev; Peter S Hall (University of Birmingham, United Kingdom) et al.

**Measurement and Characterization of the Path Loss for Ear-to-Ear Wireless Communication**

Baqer Nour; Olav Breinbjerg (Technical University of Denmark, Denmark)

**Troposphere Refraction State Classification Using Measured Attenuation of Non-Line-of-Sight Microwave Links**

Otakar Jicha; Pavel Pechac; Vaclav Kvickera; Martin Grabner (Czech Metrology Institute, Czech Republic)

**Research on the Influence of Rainfall on Millimeter Wave Doppler Fusion**

R Yang (University, P.R. China)

**Height-gain Modeling - an Analysis of the RF Signal Vertical Distribution in Urban Propagation Scenario**

Adrian Mihaiauti, Alimpie Ignea (Politehnica University of Timisoara, Romania)

**Comparison Between GMSK and PSK Modulation Systems in the Wireless Propagation Channels Emulated in a Reverberating Chamber**

Antonio Sorrentino; Giuseppe Ferrara; Maurizio Migliauccio (Universita’ Napoli Parthenope, Italy)

**Estimation of Airport Surface Propagation Channel: Ray Tracing Model and Measurements**

Pierpaolo Usai (University of Pisa, Italy); Alessandro Corucci (University of Pisa, Italy) et al.

**Experimental Investigation of Impact of Antenna Locations on the Capacity of Wideband Distributed Antenna Systems in Indoor Environments**

Xu Zhou; Xuelfeng Yin (Tongji University, PR. China); Byung-Jae Kwak (Electronics and Telecommunications Research Institute, USA) et al.

**Creation of an Isotropic Multi-Path Propagation Channel Using SATIMO SG24 System**

Moctar Mouhamadou (XLIM-UMR 6172-CNRS, University of Limoges, France); Moctar Mouhamadou (XLIM-UMR 6172-CNRS, University of Limoges, France) et al.

**Analysis of AOA-TOA Signal Distribution in Indoor Environments**

Evgeny Tsaiolkin; Igal Blik (University of Massachusetts, USA); Nathan Blaunstein (Ben-Gurion University of the Negev, Beer-Sheva, Israel) et al.

**Influence of Modelling Diffraction on Electromagnetic Wave Propagation Predictions in Subterranean Galleries**

Ludek Subrt; Pavel Pechac (Czech Technical University in Prague, Czech Republic)

**MIMO Indoor Propagation Prediction Using 3D Shoot-and-Bounce Ray (SBR) Tracing Technique for 2.4 GHz and 5 GHz**

Yousef Sama (Mobile and Satellite Communications Research Centre, United Kingdom) et al.

**Wireless MIMO Channel Capacity Analysis Based on Multiple Spatial Diversity for Indoor Propagation**

Mohamad Zainol Abidin Bin Abd Aziz (Universiti Teknikal Malaysia Melaka, Malaysia)

**Capacity of MIMO UWB Propagation Channel in Outdoor to Indoor Configuration**

Nadine Malhouroux (France Telecom Research & Development, France)

**Spatial, Polarized and Cross-Polarized Correlation Measurements for Single-Band MIMO and Multi-Band Cooperative MIMO**

Yoshichika Ohta; Sugita Yosuke; Hideki Omote (Softbank Telecom Corp., Japan); Teruya Fujii (Softbank Mobile, Japan)

**Single Layer Anisotropic Impedence Surface for Linear to Circular Polarization Conversion in Reflect Mode**

Efstratios Doumanis (Queen’s University Belfast, United Kingdom); George Goussetis (Reader, United Kingdom) et al.
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NAVRCS - A Simulation Tool for Maritime Targets Under Realistic Conditions
Helmut Essen; Hans-Helmuth Fuchs; Gregor Biegel; Gert Lindqvist (Fraunhofer FHR, Germany)

A WLAN Planning Proposal Through Direct Probabilistic Method and Particle Swarm Algorithm Hybrid Approach
Josiane do Couto Rodrigues; Simone da Gra?a de Castro Frahia; Jasmine Pracylca Leite de Araujo (Federal University of Para?, Brazil) et al.

Computational Reasoning Over Radio-propagation Models and Their Formulations
Marco Zappatore (University of Salento (Lecce), Italy)

Analysis of Nakagami Fading in VANET Scenarios
Juan ?ngel Ferreiro Lage (University of Vigo, Spain)

Vector Characteristicz of Mathieu Beams
Hongfu Meng (Southeast University, P.R. China); Wenbin Dou (Southeast University, P.R. China)

Spectrum Sensing in Mm-Wave Cognitive Radio Networks Under Rain Fading
Dimitrios Papanikolaou; Nikolaos Papanikolaou; Georgios Pitsiladis; Athanasios D. Panagopoulos et al. (National Technical University of Athens, Greece)

Rain Induced Attenuation Statistics Over a LOS Microwave Link Operating in Tropical Region Amritsar (India)
Parshotam Sharma (Model Institute of Engineering and Technology, India); Inderjit Singh ( Eternal University, India) et al.

Localized Behaviors of Rain Measured in Tokyo Tech Millimeter-wave Wireless Network
Makoto Ando; Md. Mohibul Hasan; Rushanthi Jayawardene; Takuchi Hiran; Jiro Hirokawa (Tokyo Institute of Technology, Japan)

ELF Emissions From Lightning Sprites
Manoj Kumar Parasa; Jagdish Rai (Indian Institute of Technology Roorkee, India)

Depolarization Effects
Inigo Etao; Anastra Satrustegui; Miguel Yabar (Acciona Energia, Spain); Francisco Falcone (Universidad Publica de Navarra, Spain) et al.

Propagation Over Terrain - Comparison of Method
Vladimir Schebil; Dusan Cermak (University of Pardubice, Czech Republic) et al.

Features of Short Wave Propagation in Winter Conditions
Natayla Mozhaeva (Institute for Physics, Russia)

Estimating Channel Fading Statistics Based on Radio Wave Propagation Predicted with Deterministic MR-FDPF Method
Meiling Luo (INSA-Lyon, CITI Lab, France); Dmitry Umansky (University of Lyon, France) et al.

Comparison Between Two Simulation Techniques and Measurement Results for Ultra Wideband Indoor Radio Channels
Fabricio Barros (Pontificia Universidade Catolica do Rio de Janeiro, Brazil) et al.

FSO Link Performance Modelling Using Artificial Intelligence
Martin Mudroch; Jiri Libich; Stanislav Zvanovec; Milos Mazanek (Czech Technical University in Prague, Czech Republic)

A Comparison of MLP and RBF Neural Networks Architectures for Electromagnetic Field Prediction in Indoor Environments
Ivan Vilovic (University of Dubrovnik, Croatia)

Diffraction of an Electric Polarized Wave by an Obtuse-Angled Dielectric Wedge: A UAP Solution
Giovanni Riccio; Gianluca Gennarelli (University of Salerno, Italy)

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Transmission Properties of the Circular Waveguide, Containing an Azimuthally Magnetized Ferrite Toroid and a Dielectric Cylinder
Marianna Nikolova Georgieva-Grosse, et al.

The Calculation of Magnetic Field Strength of Magnetic Antenna with Ferromagnetic Core in a Task of People’s Search Under Avalanches
Igor Boronovich Shirokov; Maxim Durmanov; Elena Redkina; Ludmila Naumicheva (Sevastopol National Technical University, Ukraine)

A New Mesh Generator Optimized for Electromagnetic Analysis
Javier Moreno; Maria Jesus Algar; Ivan Gonzalez Diego; Felipe Cadetra (University of Alcal?, Spain)

Investigation of Multipactor Effect on Return Loss Degradation
Ali Frotaanpour; Gholsamreza Dadashzadeh (Shahed University, Iran); Mahmoud Shahabadi (University of Tehran, Iran)

Microwave Measurements of Dielectric Constants of a High Dielectric Constant Material by Six Basic Mixture Equations
Jyh Sheen; Yong-Lin Wang; Weihsing Liu; Wei-Lung Mao (National Formosa University, Taiwan)

UWB Wireless Interconnect Scheme for Communicating Devices Within Small Conducting Enclosure
Javier Gelabert; David Edwards; Christopher Stevens (University of Oxford, United Kingdom)

Field Measurements Within a Reverberation Chamber Based on the Perturbation Theory
Mohamed Nasseridine; Elodie Richalot (Université Paris-Est (Marne-la-Vallée), France)

Spatial Correlations of Incremental Sources in Isotropic Environment Such as Reverberation Chamber
Xiaoming Chen; Per-Simon Kildal (Chalmers University of Technology, Sweden) et al.

Rician Channels in a RC: Statistical Uncertainty of K Estimations Versus K Fluctuations Due to Unstirred Paths
Mihai Ionut Andries; Philippe Besnier; Christophe Lemoine (IEET, France)

State-of-the-Art Measurements of LTE Terminal Antenna Performance
John Åsberg; Charlie Orlenius (Bluested AB, Sweden); Joon Ho Byun (Telecommunication R&D Center, Samsung Electronics, Korea) et al.

Ultra Light Carbon Phantom for RF Measurement of Mobile Terminals in Browsing and Jogging Positions
Yoshiaki A mano; Masayuki Nakano; Hiroyasu Ishikawa (KDDI R&D Laboratories Inc., Japan) et al.

Influence of Source Antenna Beamwidth on Gain Measurement Method Using Numerical Compact Range Concept
Kazuhiko Komiya; Ryo Yamaguchi; Keizo Cho (NTT DoCoMo, Japan)

Open-Ended Rectangular Waveguide Near-Field Frequency Response of Multilayered Structures
Ayman J. Jundi; Nasser Qaddoumi (American University of Sharjah, UAE)

Comparisons of Different Methods to Determine Correlation Applied to Multi-Port UWB Eleven Antenna
Xiaoming Chen; Per-Simon Kildal (Chalmers University of Technology, Sweden) et al.

Wideband Scalable Probe for Spherical Near-Field Antenna Measurements
Oleksiy S. Kim; Sergey Pivnenko; Olav Breinbjerg (Technical University of Denmark, Denmark)

A Novel, Non-Iterative, Analytic Method to Find the Surface Refraction Point for Air-Coupled Ground Penetrating Radar
Carey Rappaport (Northeastern University, USA)
Thursday, 14th April

**15:00 – 16:20 Room: Auditorium**

Invited lectures

- Application of Beam Methods to Electromagnetic Antenna and Scattering Problems
  Prabhakar Pathak
- Domain Decomposition Methods for solving EMC/EMI problems: Electrically Large antennas on platforms and Small (signal integrity in ICS and packages)
  Jin-Fa Lee

**15:00 – 16:20 Room: A**

Invited lectures

- Propagation Aspects in Future THz Communication Systems
  Thomas Künner
- Characterizing MIMO antenna systems and wireless stations in reverberation chamber
  Per-Simon Kildal

Thursday, 14th April

**16:40 - 18:20 Room: Auditorium**

A27: New materials, meta-materials, EBG structures III

- Chairs: Andrea Alù (The University of Texas at Austin, USA), Piergiorgio L.E. Uslenghi (University of Illinois at Chicago, USA)
- Artificial Surfaces Formed by Tesselations of Intertwined Spirals
  Andrea Vallècchi (University of Siena, Italy); Alex Schuchinsky (Queen’s University of Belfast, United Kingdom)
- Contribution on Notch Antenna Loaded by Magneto-dielectric Material
  Gwenn Le Fur; François Grange; Christophe Delaveaud (CEA-LETI, France) et al.

A28: Small antennas, RFID tags and sensors II

- Chairs: Steven R Best (The MITRE Corporation, USA), Luca Pierantoni (Università Politecnica delle Marche, Ancona, Italy)
- Dual-Band Meandered Folded Printed Quadrifilar Helix Antenna
  J. Rabemanantsoa; Ala Sharaiha (Université de Rennes 1, France)
- Analysis and Improvement of Reverberation Chamber Method for Characterization of Small and Terminal Antennas
  Christian Lötbäck; Magnus Franzén; Charlie Orlienius (Bluetest AB, Sweden)
- A Miniature Printed Antenna with Outer Surface Cable Current Suppression and Low Proximity Effects
  Benjamin Jannier; Niamien Manouan Aka Constant (Institut d‘Electronique et des Télécommunications de Rennes, France) et al.

**16:40 - 18:20 Room: A**

A27: New materials, meta-materials, EBG structures III

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  Benjamin Jannier; Niamien Manouan Aka Constant (Institut d‘Electronique et des Télécommunications de Rennes, France) et al.

**Coffee Break 16:20 - 16:40**
Thursday, 14th April

16:40 - 18:20 Room: B
A29: Millimeter / Sub-millimeter wave and THz technologies II

Chairs: Antonio García-Pino (University of Vigo, Spain), Daniel Segovia-Vargas (Universidad Carlos III de Madrid, Spain)

Fabrication of Antennas on a Thick Resin Layer Fed Through a Hole From the Bottom in a Silicon Chip At 60GHz
Jiro Hirokawa; Kim Huey Koh; Tomoya Suzuki (Tokyo Institute of Technology, Japan); Yasutake Hirachi (Ammsys Inc., Japan) et al.

A Compact Dual-Polarized Wideband Patch Antenna Array for the Unlicensed 60 GHz Band
Frank Wollenschläger; Ralf; Xia Lei; Jens Müller; Robert Müller; Alexis Paolo Garcia Ariza; Reiner S. Thomä; Matthias Hein (Ilmenau University of Technology, Germany)

COMPACT Metallic Self-Polarizing Fabry-Perot Cavity ANTENNAS with SMALL LATERAL SIZE
Shoaib Muhammad; Ronan Sauleau (University of Rennes 1, France); Hervé Legay (Thalès Alenia Space, France)

Novel LTCC UWB 60GHz Semi-shielded Aperture Stacked Patch Antenna with Differential Feeding
Bill Yang; Alexander Yarovoy; Shenario Amaldoss (Delft University of Technology, The Netherlands)

Analytic Approach to the Analysis of Ridge and Groove Gap Waveguides - Comparison of Two Methods
Marko Bosiljevac (University of Zagreb, Croatia); Alessia Polesì (University of Modena and Reggio Emilia, Italy) et al.

16:40 - 18:20 Room: C
A30: Active and integrated antennas I

Chairs: Jordi Romeu (Universitat Politècnica de Catalunya, Spain), Luciano Tarricone (University of Salento, Italy)

Independently Reconfigurable Multiband High Impedance Surface for L, C, X AND Ku RADAR Bands
Hyung-Joo Lee; Kenneth Lee Ford; Richard Langley (University of Sheffield, United Kingdom)

Performance Degradation in Silicon Integrated Antennas Due to Coils for Inductive Energy Coupling
Joan Gemio; Josep Parrón (Universitat Autonoma de Barcelona, Spain) et al.

PIFA Top-Loaded Monopole Antenna with Diversity Features for WBAN Applications
Thierry Alves; Benoit Pousset; Jean-Marc Lacheur (Université de Paris Est Marne La Vallée (UPEMLV), France)

A Double-Dipole Antenna with Parasitic Elements for 122 GHz System-in-Package Radar Sensors
Stefan Beer; Heiko Gulan; Christian Rusch; Grzegorz Adamiuk; Thomas Zwick (Karlsruhe Institute of Technology (KIT), Germany)

MEMS-4-MMIC: Design of Antenna Array Front End At 24 GHz
Marta Arias Campo; Oliver Litschke (IMST GmbH, Germany); Tauno Vaha-Heikkila; Markku Lahti (VTT Electronics, Finland) et al.

16:40 - 18:20 Room: D
A31: Planar and conformal antennas III

Chairs: Enrica Martini (University of Siena, Italy)

An X-band Slotted Waveguide Array for Radar Applications
Gianfranco Ruggerini (TeS Teleinformatica e Sistemi (A Space Engineering Company), Italy)

Planar Antennas Based on Surface-to-Leaky Wave Transformation
Gabriele Minatti; Massimiliano Casaletti; Francesco Caminita (University of Siena, Italy) et al.

A Portable Low Profile Antenna At X Band
José Manuel Inclán-Alonso; Andrés García-Aguilar; Lucia Vigil-Herrero; José-Manuel Fernández-González et al. (Universidad Politécnica de Madrid, Spain)

16:40 - 18:20 Room: G1
A35: Medical applications

Chairs: Dirk Manteuffel (University of Kiel, Germany), Anja K Skrivervik (EPFL, Switzerland)

An X-band Slotted Waveguide Array for Radar Applications
Gianfranco Ruggerini (TeS Teleinformatica e Sistemi (A Space Engineering Company), Italy)

Planar Antennas Based on Surface-to-Leaky Wave Transformation
Gabriele Minatti; Massimiliano Casaletti; Francesco Caminita (University of Siena, Italy) et al.

A Theoretical Investigation of a Loaded Micelle Exposed to Pulsed E-field
Paolo Marraccino (La Sapienza University, Rome, Italy)

Progress in Clinical Diagnostics and Treatment with Electromagnetic Fields
Andreas Flager; Xuezhi Zeng; Tonny Rubæk; Hana Dobšíček Trefná; Peter Linner et al. (Chalmers University of Technology, Sweden)

Synthesis of a Wideband Antenna Array for Microwave Imaging Applications
Leonardo Lizi; Paolo Rocca; Andrea Massa (University of Trento, Italy); Takafuli Fujimoto (Nagasaki University, Japan) et al.

Interaction Between MRI RF Field and Pacemaker Holders: A Comparison Between Birdcage and TEM Coils in 3 T Systems
Stefano Pisa; Paolo Bernardi; Alessandro Bicchi; Agnese Fabrizi; Emanuele Puzzi (Sapienza University of Rome, Italy)
Thursday, 14th April

16:40 - 18:20 Room: S1
A32: Other antenna topics

Chairs: Benito Palumbo (Retired, Italy), Carey Rappaport (Northeastern University, USA)

A Millimeter-Wave Wide-Band Transition From a Differential Microstrip to a Rectangular Waveguide for 60 GHz Applications
Markus Ortner (DICE GmbH & Co KG, Austria); Ziqiang Tong (Johannes Kepler University Linz, Austria) et al.

A Millimeter-Wave Wide-Band Transition From a Differential Microstrip to a Rectangular Waveguide for 60 GHz Applications
Markus Ortner (DICE GmbH & Co KG, Austria); Ziqiang Tong (Johannes Kepler University Linz, Austria) et al.

Singly-Fed Dielectric Resonator Antenna with a Wideband Circular Polarization
Mohamad Sulaiman; Salam Khamas (University of Sheffield, United Kingdom)

An Ultralow Cross-Polarization Slotted Waveguide Chebyshev Array Antenna
Alireza Mallahzadeh; Sajad Mohammad ali nezhad (Shahed university, Iran)

Suppression of the Slot-Mode Propagation in a Slotted Waveguide
Trevor R. Cameron; Adrian T. Sutinjo; Michal Okoniewski (University of Calgary, Canada)

16:40 - 18:20 Room: S2
A33: Numerical methods

Chairs: Paola Pirinoli (Politecnico di Torino, Italy), Emmanuel H. Van Lil (Katholieke Universiteit Leuven, Belgium)

Particle Swarm Optimization Algorithm with Moving Boundaries as a Powerful Tool for Exploration Research
Aleksy Galan; Olena Borysksina (IRE NASU, Ukraine); Ronan Sauleau (University of Rennes 1, France) et al.

Analysis of Flare Rolling and Corrugating Effects for H-plane Horn Radiator
Ozan Yurduseven (Ankara University, Turkey); Ahmet Serdar Turk (Yildiz Technical University, Turkey)

Compressed Sensing in Electromagnetics: Theory, Applications and Perspectives
Marco Donald Migliore; Daniele Pinchera (University of Cassino, Italy)

Radiation Efficiency and Q Factor Study of Franklin Antenna Using the Theory of Characteristic Modes
Pavel Hamouz; Pavel Hazdra; Milan Polivka; Miloslav Capek; Milos Mazeek (Czech Technical University in Prague, Czech Republic)

Wideband Tracking of Characteristic Modes
Bryan Raines; Roberto G. Rojas (The Ohio State University, USA)

16:40 - 18:20 Room: S3
A34: Space application antennas

Chairs: Peter de Maagt (European Space Agency, The Netherlands), Roberto Mizzi (Thales Alenia Space Italia, Italy)

Design and Final Testing of Pband Ground Station Antenna for Galileo in Orbit Test System
Lars Jacob Foged; Thierry Blin; Luc Duchesne (SATIMO, France); Luciano Piausco; Massimo Ciollaro (Inmarsat, United Kingdom) et al.

Multi-Objective Optimization of XBA Sentinel Antenna
Rodolfo Ravaneli (Thales Alenia Space Italy SpA, Italy)

GNSS Antenna for Precise Orbit Determination Including s/C Interference Predictions
Mikael Öhgren (RUAG Space AB, Sweden)

SHF Antenna Farm
Christian Hartwanger (EADS Astrium GmbH, Germany); Un Pyo Hong; Ralf Gehring (Astrium GmbH, Germany) et al.

Design and Verification of Argos Tx/Rx Space Segment Antenna
Luc Duchesne; Marc Goff; Ludovic Durand (SATIMO, France); Jean-Marc Baracco (Mardel, France); Lars Jacob Foged (SATIMO, Italy)

16:40 - 18:20 Room: N1
CA06: Inverse problems and optimization techniques

Chair: Magda El-Shenawee (U of Arkansas, USA)

Inverse Scattering Techniques to Detect the Moving Object in Complex Medium
Abdel-Aziz Hassanin (Menufia University, Egypt)

Inverse Scattering Level Set Algorithm for Retrieving the Shape and Location of Multiple Targets
Mohammad Hajihashemi (University of Florida, USA); Magda El-Shenawee (U of Arkansas, USA)

Optimization as an Information Exploitation Tool for Solving Inverse Scattering Problems
Paolo Rocca; Giacomo Oliveri; Andrea Massa (University of Trento, Italy)

Improved Quantitative Microwave Tomography by Exploiting the Physical Meaning of the Linear Sampling Method
Loreto Di Donato; Tommaso Ieremia (University of Reggio Calabria, Italy); Ilaria Catapiano; Lorenzo Crocco (CNR - National Research Council, Italy)

Radial Line Slot Array Optimization
Marco Mussetta (Politecnico di Milano, Italy); Agnese Mazzinghi (University of Florence, Italy) et al.
### Thursday, 14th April

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<td>16:40 - 18:20</td>
<td>N2</td>
<td>M05: Measurement algorithms and processing techniques</td>
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<td>Chairs: Fernando Las-Heras (Universidad de Oviedo, Spain), Roberto Vallauri (Telecom Italia, Italy)</td>
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<td>Antenna Calibration for Near-Field Problems with the Method of Moments</td>
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<td>Greg Hsiuop; Sebastien Lambot; Christophe Craey; David González-Ovejero; Rémi Sarkis (Université catholique de Louvain, Belgium)</td>
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<td>Time-Saving Scanning Schemes for Measurement of Electrically Large Antennas by Spherical Near-Field Technique</td>
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<td>Sergey Pivnenko (Technical University of Denmark, Denmark)</td>
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<td>Profile Reconstruction Using the Sources Reconstruction Method</td>
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<td>Yuri Alvarez; Cebrián Garcia; Fernando Las-Heras (Universidad de Oviedo, Spain)</td>
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<td>Echo Characterization for Imperfect Antenna Measurement Systems</td>
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<td>Rafael Ayestarán; Jana Alvarez (University of Oviedo, Spain)</td>
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<td>An Efficient Approach to the Near-Field Sampling of Electromagnetic Fields</td>
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<td>Amedeo Capozzoli; Claudio Curcio; Angelo Liseno (Università di Napoli Federico II, Italy)</td>
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### Friday, 15th April

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<tr>
<td>16:40 - 18:20</td>
<td>N3</td>
<td>P11: Mobile propagation channel modelling</td>
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<td>Chairs: Vittorio Degli-Esposti (University of Bologna, Italy), Xuefeng Yin (Tongji University, P.R. China)</td>
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<td>Comparisons of UTD-based and FK Models for Propagation Through Windows</td>
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<td>Ming Yang; Anthony Keith Brown (University of Manchester, United Kingdom)</td>
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<td>Implementation of Golden Section Search Method in SAGE Algorithm</td>
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<td>Quan Zuo; Xuefeng Yin; Junhe Zhou (Tongji University, P.R. China) et al.</td>
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<td>Impact of Wireless Propagation Channel Parameters on IEEE802.11n Performances</td>
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<td>Ali Bouhel (France Telecom R&amp;D, France); Valery Guillet (France Telecom R&amp;D, France) et al.</td>
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<td>Including Embedded Element Antenna Characteristics in Winner II Channel Models and Comparison with Isotropic Propagation Environment</td>
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<td>Ulf Carlberg (SP Technical Research Institute of Sweden, Sweden); Per-Simon Kidal (Chalmers University of Technology, Sweden) et al.</td>
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<td>The Microscopic Level of Visibility Regions for Different Scenarios in Urban Environment</td>
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<td>Ana Katalinic (Croatian Post and Electronic Communications Agency, Croatia); Radovan Zentner (University of Zagreb, Croatia) et al.</td>
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<td>Study of Propagation Model and Fading Characteristics for Wireless Relay System Between Long-Haul Train Cars</td>
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<td>Toshio Ito; Naoki Kita; Wataru Yamada; Takatoshi Sugiyama (NTT, Japan)</td>
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### Coffee Break (10:40 - 11:00)

### Friday, 15th April (continued)

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<th>Time</th>
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<td>09:00 - 10:40</td>
<td>A</td>
<td>A36: New materials, meta-materials, EBG structures IV (part 1)</td>
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<td>Chairs: Sergei Tretyakov (Helsinki University of Technology, Finland), Amir Zaghoul (Virginia Polytechnic Institute and State University, USA)</td>
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<td>Flexible Dipole and Monopole Antennas</td>
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<td>Qing Liu; Kenneth Lee Ford; Richard Langley (University of Sheffield, United Kingdom) et al.</td>
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<td>Engineeried Birefringence Positive-Negative Effective Indices: interferometric Techniques and Wedge Experiment</td>
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<td>Miguel Navarro-Cia; Miguel Beruete; Francisco Falcone; Mario Sorolla (Universidad Publica de Navarra, Spain)</td>
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<td>Investigation of Stability of Negative Impedances for Use in Active Metamaterials and Antennas</td>
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<td>Eduardo Ugarte-Muñoz (University Carlos III in Madrid, Spain); Silvio Harbar (University of Zagreb, Croatia) et al.</td>
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<td>Spherical Active Coated Nano-Particles - Impact of the Electric Hertzian Dipole Orientation</td>
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<td>Samel Arslanagic (Technical University of Denmark, Denmark)</td>
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<td>Enhancing Antenna Gain Using Magnifying Wire Medium</td>
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<td>Rostyslav Dubrovka; Pavel Belov (Queen Mary University of London, United Kingdom)</td>
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### On the Optimal Synthesis of Phase-Only Reconfigurable Antenna Arrays

- Chairs: Tommaso Isernia (University of Reggio Calabria, Italy); Hans Steyskal (c/o Air Force Research Laboratory, USA)
- Tommaso Isernia (University of Reggio Calabria, Italy); Andrea Massa (University of Trento, Italy) et al.

### Synthesis of Large Sparse Linear Arrays by Bayesian Compressive Sensing

- Michele D’Urso (SELEX Sistemi Integrati, Italy); Alessio Iacono (University Federico II, Napoli, Italy) et al.
- Giacomo Oliveri; Fabrizio Robol; Matteo Carlin; Andrea Massa (University of Trento, Italy)

### Optimizing Uniformly Excited Time-Modulated Linear Arrays

- Alexander Vorobyov (IETR, University of Rennes 1, France); Ronan Sauleau (University of Rennes 1, France) et al.
- Michele D’Urso (SELEX Sistemi Integrati, Italy); Alessio Iacono (University Federico II, Napoli, Italy) et al.

### MEMS Based Waveguide Phase Shifters for Phased Arrays in Automotive Radar Applications

- Thomas Vorobyov (IETR, University of Rennes 1, France); Ronan Sauleau (University of Rennes 1, France) et al.
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<tr>
<td><strong>A38: Multiband, wideband, UWB antennas III</strong> (part 1)</td>
<td><strong>A39: Active and integrated antennas II</strong> (part 1)</td>
<td><strong>A40: Reconfigurable antennas (part 1)</strong></td>
<td><strong>A42: Integral equations methods (part 1)</strong></td>
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<td><strong>Chairs:</strong> John Batchelor (University of Kent, United Kingdom), Marta Martínez-Vázquez (IMST GmbH, Germany)</td>
<td><strong>Chairs:</strong> Miguel Ferrando (Universidad Politecnica De Valencia, Spain), William Whittow (Loughborough University, United Kingdom)</td>
<td><strong>Chairs:</strong> Christos Christodoulou (University of New Mexico, USA), Robert Staraj (University of Nice Sophia Antipolis, France)</td>
<td><strong>Chairs:</strong> Marco Donald Migliore (University of Cassino, Italy), Juan M. Rius (Universitat Politècnica de Catalunya, Spain)</td>
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<td>Stanislav Ogurtsov; Sławomir Koziel (Reykjavik University, Iceland)</td>
<td>Maria Zamudio; Youssel Tawk (University of New Mexico, USA); Joseph Costantine (California State University Fullerton, USA)</td>
<td>Joseph Costantine (California State University Fullerton, USA); Manuel Rivera (University of New Mexico, USA)</td>
<td>Manushanker Balasubramanian (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany)</td>
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<td>Compact and Conformal Ultra Wideband Antenna for Wearable Applications</td>
<td>Compact Frequency Agile Slot Ring Resonators for Reflectarray Phase Shifting Cells</td>
<td>Influence of a Magneto-Dielectric Resonator on DVB-H Antenna Performances</td>
<td>A 'Charge and Current' Formulation of the Electric Field Integral Equation</td>
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<td>Md. Hasanuzzaman Sagor; Akram Alomainy; Yang Hao (Queen Mary, University of London, United Kingdom)</td>
<td>Mohamed Kharbech (Institut National des sciences appliquées (INSA Rennes), France)</td>
<td>Fabien Ferrero (University of Nice, France); Alexis Chevalier (University of Brest, France)</td>
<td>Jan-willem De Bleser; Emmanuel H. Van Lil; Antoine Van de Capelle (Katholieke Universiteit Leuven, Belgium)</td>
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<tr>
<td>UWB Planar Monopole Antenna with Stable Radiation Pattern and Low Transient Distortion</td>
<td>Circularly Polarised Antenna Requirements Within a Reverberator Phase Conjugation Communication System</td>
<td>Reconfigurable Monopole Antennas</td>
<td>Boolean Operations Implementation Over 3d Parametric Surfaces to Be Included in the Geometrical Module of an Electromagnetic Solver</td>
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<td>Foad Fereidoony; Somayyeh Chamaani; Abdullah Mirtaheri (K. N. Toosi University, Iran)</td>
<td>Padmini Sundaralingam; Vincent Fusco (Queen’s University Belfast, United Kingdom)</td>
<td>Abubakar Tariq; Mohammad Hamid; Hooshang Shiraz (University of Birmingham, United Kingdom)</td>
<td>Abdelhamid Tayebi; Josefa Gómez Pérez; Iván González Diego; Felipe Cétedra (University of Alcala, Spain)</td>
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<td>Carolina Mateo-Segura (Queen Mary University, United Kingdom); Alexandros Feresidis (Loughborough University, United Kingdom) et al.</td>
<td>Gonzalo Exposito-Dominguez (Universidad Politècnica de Madrid, Spain); Pablo Padilla (Universidad de Granada, Spain) et al.</td>
<td>Muhammad Faizal Ismail; Mohammad Kamal A. Rahim (Universiti Teknologi Malaysia, Malaysia)</td>
<td>Ruzica Golubović Ničiforović; Athanasios Polimeridis; Juan R Mosig (Ecole Polytechnique Federale de Lausanne, Switzerland)</td>
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<tr>
<td>UWB Printed Slot Antenna with Added Band and Notches</td>
<td>W-band Vivaldi Antenna in LTCC for CW-Radar Nearfield Distance Measurements</td>
<td>Multi-functional Miniaturized Slot Antenna System for Small Satellites</td>
<td>A Parametric Study of the Double Exponential Algorithm Utilized in Weakly Singular Integrals</td>
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<td>Hamid Reza Hassani; Sajad Mohammad ali nezhad; Mohammad Samadi (Shahed University, Iran)</td>
<td>Christian Rusch; Jochen Schäfer (Karlsruhe Institut of Technology, Germany); Tobias Klein (IMST GmbH, Germany) et al.</td>
<td>Jose Padilla (JAST SA, Switzerland)</td>
<td>Ioannis Koufogiannis; Athanasios Polimeridis; Michel Mattes; Juan R Mosig (Ecole Polytechnique Federale de Lausanne, Switzerland)</td>
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<td>Chairs: Miguel Ferrando (Universidad Politecnica De Valencia, Spain), William Whittow (Loughborough University, United Kingdom)</td>
<td>Chairs: Christos Christodoulou (University of New Mexico, USA), Robert Staraj (University of Nice Sophia Antipolis, France)</td>
<td><strong>Chairs:</strong> Marco Donald Migliore (University of Cassino, Italy), Juan M. Rius (Universitat Politècnica de Catalunya, Spain)</td>
<td><strong>Chairs:</strong> Marco Donald Migliore (University of Cassino, Italy), Juan M. Rius (Universitat Politècnica de Catalunya, Spain)</td>
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<td>Overcoming Failures in Reconfigurable Antenna Arrays Using Equivalent Frequency Dependent Graphs</td>
<td>Overcoming Failures in Reconfigurable Antenna Arrays Using Equivalent Frequency Dependent Graphs</td>
<td>Considering Surface Diffraction in the Hybrid FEBI-MLFMM-UTD Method</td>
<td>Considering Surface Diffraction in the Hybrid FEBI-MLFMM-UTD Method</td>
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<td>Joseph Costantine (California State University Fullerton, USA); Manuel Rivera (University of New Mexico, USA)</td>
<td><strong>Manushanker Balasubramanian (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany)</strong></td>
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**Coffee Break 10:40 - 11:00**
Friday, 15th April

09:00 - 10:40 Room: N2
CP13: Earth-space propagation effects: measurements, modelling and mitigation (part1)
Chairs: Joel Lemorton (ONERA, France), Aldo Paraboni (Polytechnic of Milan, Italy)

Study and Test of a New Stochastic Rain Attenuation Time Series Synthesizer Based on a Mixed Law for Tropical and Equatorial Areas
Xavier Boulanger (CNES-ONERA, France); Laurent Castanet; Nicolas Jeannin (ONERA, France) et al.

Observation of Phase Fluctuations of GPS Signals At Midlatitudes
Irk Shagimuratov; Iurii Cherniak (WD IZMIRAN, Russia); Andrzej Krankowski (GRL/UWM, Poland); Ivan Ephishov (IZMIRAN, Russia)

Aspects of Earth-space Propagation Impairments on Low-Angle Paths
David V. Rogers; Pierre Bouchard (Communications Research Centre Canada, Canada)

A Rain Attenuation Time Series Synthesizer Based on 2-State Markov Chains Coupled to an "Event-on-Demand" Generator
Marcio Rodrigues (PUC-Rio, Brazil); Guillaume Carrie; Laurent Castanet (ONERA, France); Luiz A R da Silva Mello (PUC/ RIO, Brazil)

Physical-Statistical Models of Sky Noise Temperature for Deep Space Receiving Stations From X Band to W Band
Vinia Mattioli; Frank S. Marzano; Nazzareno Pierdicca (DIE - Sapienza University of Rome, Italy) et al.

09:00 - 10:40 Room: N3
CM04: Antenna diagnostics (AMTA session)
Chairs: Lars Jacob Foged (SATIMO, Italy), Carlo Rizzo (Tecnologica Ltd., United Kingdom), Manuel Sierra-Castañer (Technical University of Madrid, Spain)

Source Reconstruction in Advanced Processing of Antenna Measurements
Javier Leonardo Araque Quijano (Universidad Nacional de Colombia, Colombia); Giuseppe Vecchi (Politecnico di Torino, Italy) et al.

Advanced Processing of Measured Fields Using Field Reconstruction Techniques
Erik Jørgensen; Peter Meinicke; Cecilia Cappellin (TICRA, Denmark)

Investigation of Full Probe Correction and Higher Order Expansion Functions in Multilevel Fast Multipole Accelerated Inverse Equivalent Current Method
Thomas F. Eibert; Carsten H Schmidt (Technische Universität München, Germany) et al.

Geometry Reconstruction From Amplitude-Only Scattered Field Data
Yuri Álvarez; Cebrián García; Fernando Las-Heras (Universidad de Oviedo, Spain)

A Theoretical Description of the IsoFilter(TM) Rejection Curve
Doren W. Hess (MI Technologies, USA)

09:00 - 10:40 Room: S1
CP03: Wireless Power Transmission and Energy Harvesting (part1)
Chairs: Tatsuio Itoh (UCLA, USA), Shigeo Kawasaki (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan), Tamotsu Nishino (Mitsubishi Electric Corp., Japan)

Yui Suzuki (The University of Tokyo, Japan) et al.

CRLH-Transmission Line Leaky Wave Antennas Integrated with Distributed Amplifiers with Power Recycling Feedback Scheme
Chung-Tse Michael Wu; Tatsuio Itoh (University of California, Los Angeles, USA)

Wireless Power Transfer with Metamaterials
Bingnan Wang; Koon Hoo Teo (Mitsubishi Electric Research Lab, USA); Tamotsu Nishino (Mitsubishi Electric Corp., Japan) et al.

Microwave WPT to a Rover Using Active Integrated Phased Array Antennas
Shigeo Kawasaki (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan)

High Speed Parallel Data Transmission and Power Transmission Technology for Wireless Repeater System
Tomohiro Seki (Nippon Telegraph and Telephone Corporation, Japan)

Chair: Tapan Sarkar (USA)
Automatic Goal Oriented Optimization Using Parallel Higher Order Basis Based Integral Equation Solver
Daniel Garcia-Dorador (University Carlos III of Madrid, Spain); Weixin Zhao (Syracuse University, USA) et al.

GPU-based Acceleration of MPIE/MoM Matrix Calculation for the Analysis of Microstrip Circuits
Danilo De Donno; Alessandra Esposito; Giuseppina Monti; Luciano Tarricone (University of Salento, Italy)

Stability Analysis of a Parallel Higher Order Basis Based Integral Equation Solver (HOBBIES) on a Cluster with 512 AMD CPU Cores
Yu Zhang (Xidian University, P.R. China); Hui Zhao (China Academy of Electronics and Information Technology, P.R. China) et al.

Accuracy: The Frequently Overlooked Parameter in the Solution of Extremely Large Problems
Ozgur Ergül (University of Strathclyde, United Kingdom); Levent Gürel (Bilkent University, Turkey)

Parallel Higher Order Method of Moments for Accurate Analysis of Antenna-Radome-Platform System
Xun-Wang Zhao; Yu Zhang (Xidian University, P.R. China); Daniel García-Dorador (University Carlos III of Madrid, Spain) et al.

Coffee Break 10:40 - 11:00
Friday, 15th April

09:00 - 10:40 Room: G1
CA28: Advances in Computer-assisted design of antennas including requirements, modelling, algorithms (part1)

Chairs: Poul Erik Frandsen (TICRA, Denmark), Francesca Mioc (Consultant, Switzerland), Marco Sabbadini (Esa Estec, The Netherlands)

An Overview of Cad Tools Developed At IETR for the Synthesis and Optimisation of Shaped Lens Antennas At Millimetre Waves
Anthony Rolland (IETR, University of Rennes 1, France); Ngoc Tinh Nguyen (University of Rennes 1, France) et al.

Array Full-Wave Optimization and Space Mapping Techniques Using Fast MoM Solvers
Fabio Milani; Mirko Bercigli; Mauro Bandinelli (Ingegneria dei Sistemi, IDS, Italy); Angelo Freni (University of Florence, Italy) et al.

Feed-Array Design in Presence of Strong Scattering From Refleectors
Mauro Bandinelli; Fabio Milani; Giancarlo Guida; Mirko Bercigli (IDS Ingegneria Dei Sistemi S.p.A, Italy) et al.

Modelling of Transmission Through Apertures in Thick Dielectric Screens Using Volume Integral Equations
Vladimir Volski; Guy A. E. Vandenbosch (Katholieke Universiteit Leuven, Belgium)

On the Radiation Resistance for Small Capacitive Dipole Antennas
Mats Gustafsson; Daniel SJöberg (Lund University, Sweden)

09:00 - 10:40 Room: S2
P12: MIMO propagation and system aspects

Chairs: Andreas Richter (Aalto University, Finland), Werner Wiesbiek (Karlsruhe Institute of Technology, Germany)

Experimental MIMO Capacity Results Based on Macro-Cell Metropolitan Channel Measurements in Shanghai
Ping Wang (SIMIT, P.R. China); Yingzhe Li (CAS, P.R. China) et al.

Elevation Extension for a Geometry-Based Radio Channel Model and its Influence on MIMO Antenna Correlation and Gain Imbalance
Lassi Hentila; Peikka Kyöst; Juha Meininla (Elektrobital Corporation, Finland)

Estimation of 2X2 MIMO Capacity with Dual-Polarized Antennas Under Received Power Imbalance Through Propagation Measurements
Shinobu Nanba; Yuki Hirota; Yoji Kishi (KDDI R&D Laboratories, Japan)

Analysis of the Performance of LTE Systems in an Interleaved F-DAS MIMO Indoor Environment
Enrico Maria Vitucci (University of Bologna, Italy); Luigi Tarlazzi (CommScope Italy Srl, Via Mengolina, 20 Faenza, Italy) et al.

Consideration of MIMO in the Planning of LTE Networks in Urban and Indoor Scenarios
Oliver Stäbler; Reiner Hoppe; Gerd Wölfle; Timm Hermann (AWE Communications GmbH, Germany)

MIMO Capacity in Space and Time Domain for Various Urban Environment
Evgeny Tsalolikhin (University of Massachusetts, Dartmouth, USA)

10:40 - 11:00
Coffee Break

Friday, 15th April

11:00 - 12:40 Room: A
A36: New materials, meta-materials, EBG structures (part 2)

Chairs: Sergei Tretyakov (Helsinki University of Technology, Finland), Amir Zaghoul (Virginia Polytechnic Institute and State University, USA)

Modelling EBG Surfaces Using Amended DB Boundary Conditions
Marko Bosiljevac; Zvonimir Sipus; Per-Simon Kildal (Chalmers University of Technology, Sweden) et al.

Broadband Extraordinary Transmission Device Realized with Dielectrics
Di Bao; Wenzhuan Tang; Yang Hao (Queen Mary, University of London, United Kingdom)

Novel Frequency Selective Electromagnetic Absorber Combining Honeycomb Waveguide and Carbon Nanotube Composites
Stephanie Eggermont; Pierre Bollen; Isabelle Huynen (Université catholique de Louvain, Belgium)

Method of Moments Formulation for the Analysis and Design of Plasmonic Nano-Optical Antennas of Arbitrary Shape
Jose M. Taboada; Javier Rivero; Luis Landesa (University of Extremadura, Spain); Marta G. Araujo (Universidade de Vigo, Spain) et al.

Dual Band Textile Antenna on EBG for WiFi Applications
Mohamad Mantash; Anne-Claude Tarot; Sylvain; Kourosh Mahdjoubi (University of Rennes 1, France)

11:00 - 12:40 Room: B
A37: Array antennas (part 2)

Chairs: Tommaso Isernia (University of Reggio Calabria, Italy), Hans Steyskal (c/o Air Force Research Laboratory, USA)

The New Role of Time-Modulation for Innovative Array Synthesis
Giacomo Oliveri; Matteo Carlin (University of Trento, Italy)

A Ka Band Planar Slot Array Antenna for 45 Degree Linear Polarization Using Substrate Integrated Waveguide
Dong-yeon Kim; Sangwook Nam (Seoul National University, Korea)

Comparison of 60 GHz Low and High Gain Antennas for Coverage Analysis of Aircraft In-cabin Radio Link
Itziar de la Torre; Jürgen Kunisch; Christos Oikonomopoulos-Zachos; Marta Martinez-Vazquez (IMST GmbH, Germany)

On a Multi-Objective Approach in the Non-Uniform Symmetrical Linear Array Antenna Design
Francesco Napoli; Lara Pajewski; Giuseppe Schettini (“Roma Tre” University, Italy); Roberto Vescovo (University of Trieste, Italy)
Friday, 15th April

11:00 - 12:40 Room: C
A38: Multiband, wideband, UWB antennas III (part 2)
- Chairs: John Batchelor (University of Kent, United Kingdom), Marta Martinez-Vázquez (IMST GmbH, Germany)
- PIFA Antenna for UWB Applications with WLAN Band Rejection Using Spiral Slots
  Hmeda Hraga; Chan Hwang See; Raed A. Abd-Alhameed (University of Bradford, United Kingdom) et al.
- A Frequency Tunable Embedded Normal-Mode Helix Antenna for Portable Wireless Devices
  Shahraz Jalali Mazlouman (Simon Fraser University, Canada); Aireza Mahanfar (Microsoft Corp., USA); Carlo Menon (SFU, Canada) et al.
- Time and Frequency Domain Characteristics of UWB Cavity-Backed Slot Antenna Array
  Guillaume Clement; Ali Chami (Université Nice Sophia Antipolis, France); Nicolas Fortino (University of Nice, France) et al.
- A Novel Dual-band and Dual-polarised Antenna for WLAN Systems
  Shihua Wang (Queen Mary University of London, United Kingdom); Dean Kitchener (Wireless Technology Laboratories Ltd, United Kingdom) et al.
- Photocative Switches for Radar Systems Exploiting Time Domain
  Maria Grazia Labate; Aniello Buonanno; Michele D’Ursua; Giovanni Calzoiaio (SELEX Sistemi Integrati, Italy) et al.

11:00 - 12:40 Room: D
A39: Active and integrated antennas II (part 2)
- Chairs: Miguel Ferrando (Universidad Politecnica De Valencia, Spain), William Whittow (Loughborough University, United Kingdom)
- Novel All-Dielectric Mm-Wave Horn Antennas Based on EBG Structures
  Irina Khromova; Ramon Gonzalez; Itigo Ederra; Jorge Teniente (Public University of Navarra, Spain) et al.
- RF-MEMS-based Millimeter-Wave Switch for Integrated Antenna Applications
  Amin Enayati (ESAT, Katholieke Universiteit Leuven, Belgium); Xavier Rotenberg; Walter Raedt (IMEC, Belgium) et al.
- Equivalent Circuit of FSS Loaded with Lumped Elements Using Modal Decomposition
  Rostyslav Dubrovka; Robert Donnan (Queen Mary, University of London, United Kingdom)
- Increasing Parallel Plate Stop-band in Gap Waveguides Using Inverted Pyramid-Shaped Nails for Slot Array Application Above 60GHz
  Ashraf Zaman (Chalmers University of Technology, Sweden); Vessen Vassilev (Sweden) et al.
- Photoconductive Switches for Radar Systems Exploiting Time Domain
  Florian Pivit; Thomas Bohn; Nils Larcher; Daniel Markert (Alcatel-Lucent, Germany)
11:00 - 12:40 Room: N3

A41: Small antennas, RFID tags and sensors III

Chairs: Patrice Brachat (France Telecom, France), Milos Mazanek (Czech Technical University in Prague, Czech Republic)

A Linearly Polarized Huygens Source Formed by Two Omega Particles
Pekka Alitalo (TKK Helsinki University of Technology, Finland); Antti Karilainen (Aalto University, Finland) et al.

RFID Tag Antenna for Passive Strain Sensing
Cecilia Occhiuzzi; Corrado Paggi; Gaetano Marrocco (University of Rome Tor Vergata, Italy)

A New Enhanced UHF RFID Sensor-Tag
Luca Catarinucci; Riccardo Colella; Luciano Tarricone (University of Salento, Italy)

Reduction of the Absorption Loss in the Head Via a Metamaterial Loaded Antenna
Samantha Caporal Del Barrio; Ivan Bonev; Mauro Pelosi; Ondrej Franek; Gert Pedersen (Aalborg University, Denmark)

11:00 - 12:40 Room: N2

CP13: Earth-space propagation effects: measurements, modelling and mitigation (part2)

Chairs: Joel Lemorton (ONERA, France), Aldo Paraboni (Politecnico of Milan, Italy)

A Theoretical Approach for the Dynamic Reconfiguration of an On-Board Antenna Pattern and its Performance Assessment
Aldo Paraboni; Carlo Capsoni; Laura Resteghini; Marco Lucchini (Politecnico di Milano, Italy); Roberto Nebuloni (Leiit - Cnr, Italy)

Simultaneous Beacon and Radiometer Propagation Measurements in the Ka-band
Jose M Riera; Ana Benarroch; Pedro Garcia-del-Pino (Universidad Politecnica de Madrid, Spain) et al.

A Review of ESA Activities on Tropospheric Channel Modeling and Characterization for Spatial Systems
Antonio Martellucci (European Space Agency, The Netherlands); Pavel Valfr (European Space Agency (ESA/ESTEC), The Netherlands)

Distance-Aware Adaptive Resources Allocation for LEO Satellites Constellations
Marwen Abdennabi (L2TI Laboratory, University of Paris Nord, France); Nawel Zangar (Université de versailles Saint quentin en yvellines, France)

Planning of Advanced SatCom Systems Using ACM Techniques: The Impact of Rain Fade
Lorenzo Luini (Politecnico di Milano, Italy); Luis Emiliani (SES-ASTRA, Luxemburg); Carlo Capsoni (Politecnico di Milano, Italy)

Friday, 15th April

11:00 - 12:40 Room: S1

CP03: Wireless Power Transmission and Energy Harvesting (part2)

Chairs: Tatsuo Itoh (UCLA, USA), Shigeo Kawasaki (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan), Tamotsu Nishino (Mitsubishi Electric Corp., Japan)

Development of Rectenna with Wireless Communication System
Naoki Shinohara (Kyoto University, Japan)

Power Balance of Inductive Wireless Power Transmission
Jan Kracek; Milos Mazanek (Czech Technical University in Prague, Czech Republic)

Magnetic Field Design for High Efficient and Low EMF Wireless Power Transfer in On-Line Electric Vehicle
Seungyoung Ahn; Joungho Kim (Korea Advanced Institute of Science and Technology, Korea)

Effect of Nearby Human Body on WPT System
Qiaowei Yuan (Sendai National College of Technology, Japan)

11:00 - 12:40 Room: S3

CA05: Parallelisation and fast solver techniques for numerical methods (part2)

Chair: Tapan Sarkar (USA)

Electromagnetics and Information Technology: Much More Than High Performance Computing
Luciano Tarricone (University of Salento, Italy)

Parallel Computation of Radar Cross Section of Target with Coatings
Ying Yan (Xidian University, P.R. China); Hui Zhao (China Academy of Electronics and Information Technology, P.R. China) et al.

Performance Evaluation of the Multi-Device OpenCL FDTD Solver
Tomasz Stefanski (ETH Zurich, Switzerland); Nicolas Chavannes (IT’IS Foundation, ETH Zurich, Switzerland) et al.

FPGA Implementation of Pipeline Digit-Slicing Multiplier-Less Radix 22 DIF SDF Butterfly for Fast Fourier Transform Structure
Yazan Samir Algnabi; Rozita Teymourzadeh (National University of Malaysia (UKM), Malaysia) et al.
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<th>Time</th>
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<td>11:00 - 12:40</td>
<td>Room: G1</td>
<td>CA28: Advances in Computer-assisted design of antennas including requirements, modelling, algorithms (part2)</td>
<td>Chairs: Poul Erik Frandsen (TICRA, Denmark), Francesca Mioc (Consultant, Switzerland), Marco Sabbadini (Esa Estec, The Netherlands)</td>
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<td>Finiteness Effects in Wideband Connected Arrays: Analytical Models to Highlight the Effects of the Loading Impedances</td>
<td>Andrea Neto; Daniele Cavallo; Giampiero Gerini (TNO - Defence, Security and Safety, The Netherlands)</td>
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<td>Scatterer-Induced Feed Mismatch Estimate by Using a Generalized Spherical Wave Matrix Approach</td>
<td>Cristian Della Giovampaola; Enrica Martini; Alberto Toccafondi; Stefano Maci (University of Siena, Italy)</td>
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<td>Beam-Waveguide Analysis Using Complex Conical Beams</td>
<td>Sinisa Skokic (University of Zagreb, Croatia); Massimiliano Casteletti; Stefano Maci (University of Siena, Italy) et al.</td>
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<td>Algorithm and Modeling for Fast Optimization and Design of Large Log-Periodic Array Antennas with Commercial EM Solvers</td>
<td>Jian Yang; Per-Simon Kildal (Chalmers University of Technology, Sweden)</td>
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<td>Sparse Array Synthesis Via Alternating Projections and Iterative Field Synthesis Orthogonalization</td>
<td>Javier Leonardo Araque Quijano (Universidad Nacional de Colombia, Colombia); Giuseppe Vecchi (Politecnico di Torino, Italy) et al.</td>
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<td>Room: S2</td>
<td>P13: Electromagnetic propagation modelling</td>
<td>Chairs: Vaclav Kvicera (Czech Metrology Institute, Czech Republic), Frank S. Marzano (Sapienza University of Rome, Italy)</td>
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<td>Comparisons of Approximate and Exact Solutions for Forward Scattering</td>
<td>Vladimir Schejbal (University of Pardubice, Czech Republic); Ondrej Fiser (Institute of Atmospheric Physics, Czech Republic) et al.</td>
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<td>Efficient Implementation and Evaluation of Parallel Radio Wave Propagation</td>
<td>Florian Schröder; Michael Reyer; Rudolf Mathar (RWTH Aachen University, Germany)</td>
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<td>Green’s Function Formulation for Multilayered Cylindrical Structures and Its Application to Scattering Problems</td>
<td>Sergey Knyazev; Yury Kostitsyn (Ural Federal University, Russia) et al.</td>
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<td>Propagation Velocity Equalizer Circuit on Multi Microstrip Transmission Line Structure</td>
<td>Jaejun Lee; Byungjoon Kim; Sangwook Nam (Seoul National University, Korea)</td>
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<td>Surface Boundary Conditions for Lossy Dielectrics to Model Electromagnetic Wave Propagation in Tunnels</td>
<td>Jorge Avella (France)</td>
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<td><strong>Tuesday 12th April</strong></td>
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<td><strong>Wednesday 13th April</strong></td>
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**CARE Workshop**

Coordinating the Antenna Research in Europe

Starting from the results achieved by the ACE Network of Excellence, the CARE project will continue and reinforce the collaboration among the European Institutions involved in antenna research, with a specific emphasis on focus on the New Member States.

CARE will reinforce the collaborations among the European Institutions by:

1) Researchers secondments
2) International workshops
3) Training courses
4) Dissemination, by conferences and Internet

CARE will also support the dissemination of the research results within the enlarged Europe, in close cooperation with the European Association on Antennas and Propagation (EurAAP).

In particular, CARE organizes a Workshop on Wednesday 13 April 2011, joined with the EuCAP 2011. The workshop will be focused on presenting the project status and the future activities.

In this frame, you are welcome to the CARE workshop where you can be informed about the possibilities to take benefit from the CARE Project by sending or hosting students secondments funded by CARE.

**EuroAAP WG Software Meeting**

Electromagnetic Data Exchange Language Developer’s Condensed Course

The EDX team is proud to announce Electromagnetic Data Exchange Language Developer’s Condensed Course at EuCAP2011, organised by ESA and the EuroAAP Software Working Group in cooperation with the European School of Antennas, held as part of the EuroAAP Software Working Group Meeting in EUR Congressi, Wednesday 13 April 2011 at 15:30.

**CST Workshop**

Design Flow: From Antenna to Array design

Classical workflow of array designers starts from a correct choice of a suitable element topology depending on the prescribed design specifications. This can be achieved either through literature research either through rearrangement of past available structures. Further steps are generally connected to a fast and efficient procedure ("Infinite array approach") to analyze and optimize the overall array performances such as Active element Gain, Active S-Parameters, bandwidth, beam-scanning capability taking into account the E.M. inter-element mutual coupling.

The final step is the simulation of the finite array structure since the edge effects, neglected by the infinite array approach, must be taken into account as well for a final validation.

The scope of this workshop is to show how efficiently CST STUDIO SUITE™ can be applied to the aforementioned time-consuming tasks related to antenna and antenna array design.
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**Short Course 1:**
*Extensions of Spherical Near-Field Scanning*
Doren Hess, MI Technologies
Date: Sunday 10th April
Transformation

**Short Course 2:**
*Electromagnetics and Its Applications to Antenna Engineering*
Yang Hao, Queen Mary, University of London
Raj Mittra, Pennsylvania State University
Date: Sunday 10th April

**Short Course 3:**
*EM Design of complex antennas*
Matthias Geissler, IMST GmbH
Date: Friday 15th April

**Short Course 4:**
*Electronically Scanned Reflectarrays*
Julien Perruisseau-Carrier, CTTC
Date: Friday 15th April

**Short Course 5:**
*Radio Network Optimization and Planning of High Capacity Heterogeneous 3G and 4G Networks*
Francisco Falcone, Universidad Publica de Navarra
Date: Friday 15th April

**Short Course 6:**
*Radio and Optical Waves Propagation Modelling for Scientists and Engineers*
Ondrej Fiser, Institute of Atmospheric Physics of the Czech Academy
Date: Friday 15th April

**Short Course 7:**
*MIMO Antenna Measurements made simple for 4G Systems*
David A. Sanchez-Hernandez, Technical University of Cartagena
Date: Friday 15th April

**Short Course 8:**
*The ABC of small antennas*
Matthias Hein, Ilmenau University of Technology
Date: Friday 15th April
Welcome Drink
Palazzo dei Congressi
Monday, April 11th, 18:30 h

The EuCAP Committee is glad to welcome the delegates to share a complimentary welcome drink organized at Palazzo dei Congressi on Monday April 11st, at 18:30 just after the Sessions.

This is the ideal opportunity to say hello to other attendees and to network with fellow delegates from around the world. The Welcome Drink will be free of charge for all attendees of EuCAP 2011!

Gaia Dinner
Villa Miani, Via Trionfale 151, 00136 Roma
Thursday, April 14th
19:30 h cocktail, 20:30 h dinner

The Conference dinner will be held in one of the most exclusive venues in Rome, the magnificent Villa Miani placed over the hill of Monte Mario in a green oasis within the City. Built in 1873 by "Società Monte Mario" as a strolling place, Villa Miani is an elegant neoclassic building surrounded by acres of extremely cured English-style lawn that offers an absolutely unique and spectacular view over Rome. Comfortable buses, will arrange the transportation from Palazzo dei Congressi with departure at 18:30, offering the opportunity for a short city tour. The guests will arrive at Villa Miani in time to admire the amazing colors and lights of Rome at the sunset while enjoying a welcome cocktail in the garden. The return will be organized such to leave the attendees as close as possible to their hotels. Fee per Person: 70,00 €

Guest Program

Historic Museum of Radios
Tuesday, April 12th, 9:30 h

The Museum of Radios is located just inside the beautiful Vatican Gardens and stores hundreds of devices that recall the past History of radio broadcasting along the past decades: microphones, recorders, receivers and so on. The exhibition of vintage devices is enriched by a significant collection of photos and movies.

The guests will meet at the S. Ufficio gate at the entrance of Vatican State and will have the possibility to enter the Vatican boundary, cross the Gardens and visit the Museum.

The maximum number of admitted guests is 20!
Visit booking will be available onsite, at the EuCAP Registration Desk.

Preliminary Program:
9:30: Meeting point at the S. Ufficio gate and document check / 12.30: End of the visit
Info: Jesuit Father Bruno Biscoglia S.J., University of Salerno, bbiscoglia@unisa.it
Admission fee: Free. Please ask at the registration desk for available spaces.

The Machines of Leonardo Da Vinci

An exhibition dedicated to the universal genius of Leonardo Da Vinci, in the heart of Rome with numerous touring versions all over the world, the Leonardo Da Vinci’s Museum give to every single visitor a unique experience where its sensorial perception and the knowledge about “Leonardo” espouse together to donate the feeling of being immerse in a very topically past. A landmark both for visitors and training aid, a cognitive instrument, the Leonardo Da Vinci's Museum of Rome has the real machines draw by Da Vinci’s codes. An imposing and peculiar work, made with trifle care to realize actual working machines, with great size, built the way of special processes: these machines, not just "models" are entirely made by wood and this required the use of sophisticated technologies both special human skills. This Museum is an exhibition well studied and well-groomed down to the smallest detail, where machines interactivity play the key role.

EuCAP Delegates will find inside their Conference bag two 40 % discount coupons!

Palazzo della Cancelleria
Piazza della Cancelleria, 00186 Roma
Info: E-mail: info@mostradileonardo.com
Tel: +39.06.69887616
Admission fee: 5 € (instead of 9 €). Please ask at the registration desk for available spaces.

Social Events & Tourist Visits
Walking along Emperor Roots
11th April 14:00 - 18:00 / 14th April 09:00 -13:00
Duration: 4 hours
Fee* per Person: 62,00 €
* The price per person includes coach, city taxes, guide, entrance to Coliseum, headphones.

Baroque Rome
13th April 14:00 - 18:00
Duration: 4 hours
Fee* per Person: 44,00 €
* The price per person includes coach, city taxes, guide, headphones.

Roman Castle
14th April 14:00 - 18:00
Duration: 4 hours
Fee* per Person: 63,00 €
* The price per person includes coach, city taxes, guide, headphones, wine tasting.

Booking forms will be available at KUONI desk during the congress days for participants that would like to take part to city tours/excursion and haven't booked in advance.
Payment by credit card or cash on the spot available.
Voucher: For tours and excursions you can pick up your tickets onsite at the congress center at tour desk.
EuCAP 2011 website
http://www.eucap2011.org/

Registration fees
Registration includes attending the full conference and scientific sessions. Coffee during the official breaks is included as well as the lunch refreshments. Lunch for Students/Retired is not included and can be booked additionally.

Short Courses and Workshops
For last minute Workshop- or Short Course-Registrations, please apply at the registration counter.

Fees Short Courses:
Half day 150,00 €
Full day 250,00 €

On-Site Registration Counter – Office Hours
The registration desk on site will be open as follows:
Sunday, 10th April: 13:00 – 17:00
Monday, 11th April: 08:00 – 17:00
Tuesday, 12th April: 08:00 – 17:00
Wednesday, 13th April: 08:00 – 17:00
Thursday, 14th April: 08:00 – 17:00
Friday, 15th April: 08:00 – 10:00

Badges
All delegates will receive a badge and tickets for the booked events. Participants are kindly requested to wear their badges throughout the conference, even at the social events.

The replacement of lost or forgotten badges carries a € 25 charge. In order to facilitate the duplication of the badge, please present a copy of your registration confirmation as proof.

Official Language
All sessions will be held in English only.
No translation will be provided.

EuCAP 2011 Conference Venue
Roma Palazzo Congressi
Piazza J.F. Kennedy 1
00100 Roma / Italy
Phone: +39 0654513710
Fax: +39 0654513800
Website: http://www.eurcongressiroma.it/en
E-Mail: info@eurcongressiroma.it

Shopping
If you love to shop then you’re going to love Rome!
Rome is a great place for shopping, with designer outlets and department stores all over the city. A cosmopolitan and thriving capital city for over 2000 years, Rome provides a multi-ethnic mix that is both attractive and explosive!

Rome is home to a diverse array of shopping opportunities. The five “must be” shopping areas in Rome are: “Piazza di Spagna”, “Via del Corso”, “Trastevere”, Viale Marconi as well as the flea market “Porta Portese” which takes place every Sunday from 8:00 am till 2:00 pm.
Shops in Rome usually, except on Sunday and Monday mornings, open from 9:00 am - 1:00 pm and from 3:30 pm - 7:30 pm (in summer: 4:00 pm - 8:00 pm).

Currency
Italy uses the Euro (€).

ATM’s
Make sure your bankcard is of the four PIN number type; this is the standard in Rome. ATM’s in Italy are compatible with the Cirrus or Plus system.

Credit and debit cards
Credit and debit cards are widely accepted. But, however, many of smaller shops, cafes and smaller restaurants do not take credit cards.

Time Zone
The time zone in Italy is UTC/GMT +1 hour

Telephone code
The country code for Italy is 0039; please dial this number before a local Italian number. Each city in Italy has its own city code. The city code of Rome is 06. So when you make a call from another country than Italy to Rome dial 0039 + 06 + the phone number.

Speaker upload
Please bring your presentations on a USB memory stick or CD-ROM in MS-Power Point or Adobe PDF format to EuCAP 2011 and submit it in the Session Room at the conference venue at least 20 minutes prior to your session!

Wireless Access
The Eur Congressi has got a wireless network. For accessing this network, please contact the registration desk.

Weather
Temperatures around 18 °C (64 °F) may be expected in April. It is recommendable to bring warm clothes, since it can be rather cold at this time of year.

Safety and insurance
As in all major cities, people should be aware of safety risks. You are advised not to wear your conference badge outside congress activities.

It is highly recommended that all participants carry adequate personal travel and health insurance.

The Organizing Committee of EuCap 2011 cannot assume any responsibility and will not accept any liability in these matters.

Emergency Services
The national telephone number for all emergency services in Italy including AMBULANCE, FIRE and POLICE is “112”.

Other useful telephone numbers are:
Ambulance Service (Ambulance) 118
National Police (Police) 112
Fire Service 115

Destination Rome
The city of Rome is located in the central-western portion of the Italian Peninsula, on the Tiber river within the Lazio region of Italy. Rome’s history spans over two and a half thousand years. It was the capital city of the Roman Kingdom, the Roman Republic and the Roman Empire, which was a major political and cultural influence in the lands bordering the Mediterranean Sea for over four hundred years from the 1st Century BC until the 4th Century AD. Since the 2nd Century AD Rome has been the seat of the Papacy and, after the end of Byzantine domination in the eight century it became the capital of the Papal States, which lasted until 1870. In 1871 Rome became the capital of the Kingdom of Italy, and in 1946 that of the Italian Republic. Since 1929 it is also the site of the Vatican City, an independent city-state run by the Pope.

During the Middle Ages, Rome was home to popes such as Alexander VI and Leo X, who transformed the city into one of the major centres of the Italian Renaissance, along with Florence. The current-day version of St Peter’s Basilica was built and the Sistine Chapel was painted by Michelangelo. Famous artists and architects, such as Bramante, Bernini and Raphael resided for some time in Rome, contributing to its Renaissance and Baroque architecture.

Rome, especially in classical times, has been influential in the world regarding subjects such as architecture, art, culture, politics, literature, law, philosophy and religion. Due to this centrality on many levels and powerful city-status, Rome has been nicknamed “Caput Mundi” (Latin for “Capital of the World”) and “The Eternal City”. The city is, on addition, an important centre of pilgrimage in the Christian, notably the Roman Catholic Church, and St Peter’s Basilica, found in the Holy See, is often called the “the greatest of all churches of Christendom”. Rome’s architectural and archaeological sites contribute to it having many UNESCO World Heritage Sites.

Its global influence in politics, literature, high culture, the arts, music, religion, education, fashion, cinema and cuisine lead it to being considered an Alpha-world city, according to Loughborough University and GaWC in 2008. Rome is also a hub of the cinematic and filming industry; for example, the Cinecittà Studios, which saw the filming of several internationally acclaimed movies as well as television programs, are located in the city.
Getting to Eur Congressi Roma S.p.A. by public transport

By direct train from Fiumicino Airport:
This airport is connected non-stop to the Termini Station by Leonardo Express direct train. The train runs every 30 minutes with a journey time of 30 minutes.

By Bus from Ciampino Airport:
This airport is connected by bus to the Termini Station and to the Anagnina underground stop.

From Termini Station by B-Line:
Take the underground B Line in direction Laurentina up to Eur Fermi stop. The line runs from 05:30 am to 11:30 pm.

For further information, please visit the Rome Public Transport (http://www.atac.roma.it).
Exhibitors & Sponsors

Agilent Technologies
Via Piero Gobetti, 21/C
Centro Direzionale Villa Fiorita
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ITALY
www.agilent.com
Booth Number 35

Agilent has provided solutions for Electronics Test and Measurement since 1939. We pioneered the markets for many of today's electronic test instruments, enabling the digital and wireless revolutions now under way.

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ITALY
www.ansys.com
Booth Number 25

ANSOFT is the ANSYS product suite for hi and low frequencies simulation.

ACTIONS & SERVICES
47, Chemin de l’Orée de Soisy
91450 Soisy sur Seine
FRANCE
www.as-s.com
Booth Number 9

Actions & Services has more than 15 years of experience in mmwave systems supply. We have installed a large number of High Tech Telecom Training Labs for students in European technical schools and Universities.

Antenna Systems Solutions – ASYSOL
Centro de Empresas (Office #1)
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Campus de Montegancedo
28223 Pozuelo de Alarcón
SPAIN
www.asysol.com
Booth Number 9

ASYSOL is one of the most technologically advanced organizations capable of leading in the invention, development and manufacture of the RF industry's most advanced test systems (antenna metrology, antenna development, microwave components, automation and software), with the result of providing professional solutions, services, consultancy and training.

Exhibitors & Sponsors

AMTA
www.amta.org
Booth Number 7
EuCAP 2011 Sponsor

The Antenna Measurement Techniques Association (AMTA) is a non-profit professional organization for members involved in research and development of antenna and radar-scattering measurements. The principal objective of AMTA is to provide a forum for the exchange of information on electromagnetic measurement techniques and problems.

ASTRIUM
www.astrium.eads.net
Booth Number 23 + 24

Astrium, number 1 space company in Europe and 3 worldwide, employs 15,000 men and women in France, Germany, Netherlands, Spain and UK. All professionals chosen from among the very best, all passionate about space.

WinProp by AWE-Com
AWE Communications GmbH
Otto-Lilienthal-Str. 36
71034 Boeblingen
GERMANY
www.awe-communications.com
Booth Number 21

AWE’s WinProp software suite provides accurate propagation models with short computation times for rural, urban, indoor and tunnel scenarios. Beyond propagation WinProp includes adaptive modules for the simulation and planning of wireless networks.

Bluetest AB
Lindholmen Science Park
Götevärsgatan 1
417 55 Gothenburg
SWEDEN
www.bluetest.se
Booth Number 29

Bluetest’s RTS series of systems with a unique and patented technology significantly saves time and cost for OTA (Over-The-Air) tests of wireless devices with small antennas.
EMSCAN is a world-leading developer of real-time magnetic near-field measurement solutions. We provide Real-Time Visual Test Solutions for Antenna and PCB Designers and Verification Engineers.

Space is a key asset for Europe, providing essential information needed by decision-makers to respond to global challenges. Space provides indispensable technologies and services, and increases our understanding of our planet and the Universe. Since 1975, the European Space Agency (ESA) has been shaping the development of this space capability.

ESoA courses prolong for five days and consist of about 20 - 25 hours of lectures and 15 - 20 hours of other activities. The lectures are provided both by people from the host Universities and by keynote speakers from other institutions.

EPFL is one of the two Ecoles Polytechniques in Switzerland. EPFL has three missions: education, research and technology transfer at the highest international level. EPFL is ranked (2010) as the best European university in the area of Engineering.
**MICIAN GmbH**
Schlachte 21
28195 Bremen
GERMANY
www.mician.com
Booth Number 18

MICIAN GmbH develops and markets software tools for fast and accurate designs of passive waveguide components and antennas.

**MICROSPACE s.r.l.**
ITALY
www.microspace.it
Booth Number 39 + 40


**The Microwave Vision Group**
17, Avenue de Norvège
1140 Villebon-sur-Yvette
FRANCE
www.microwavevision.com
Booth Number 1 + 2

The Microwave Vision Group comprises SATIMO, ORBIT/FR, and AEMI. It is dedicated to the conception, production and sale of antenna test and measurement solutions.

**MI Technologies**
1125 Satellite Blvd.
Suite 100
Suwanee, GA 30024
USA
www.mi-technologies.com
Booth Number 19 + 20

Over 50 years ago, MI Technologies introduced the world to microwave measurement systems and we continue to build on that legacy. MI is the leading global supplier of RF and Microwave products, systems, services and training.
<table>
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<tr>
<th>Exhibitors &amp; Sponsors</th>
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<tr>
<td>Schmid &amp; Partner Engineering AG (SPEAG) is the leading developer and manufacturer of the most reliable, efficient, user-friendly and advanced experimental (DASY, ISAR, SAR/OTA Phantoms) and numerical tools (SEMCAD X) for the electromagnetic near- and far-fields from DC to light.</td>
<td>Schmid &amp; Partner Engineering AG Zeughausstr. 43 8004 Zurich SWITZERLAND <a href="http://www.speag.com">http://www.speag.com</a> Booth Number 27 + 30 EuCAP 2011 Sponsor</td>
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<td>SIEPEL is a manufacturer of a wide range of microwave absorbers and anechoic chambers dedicated to EMC, antenna testing and compact range. These absorbers are designed per numerical simulation.</td>
<td>SIEPEL ZA de Kermarquer Impasse de la Manille 56470 La Trinite sur Mer FRANCE <a href="http://www.siepel.com">www.siepel.com</a> Booth Number 26</td>
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<td>NSI is a high technology company that manufactures systems, including positioners RF instrumentation and software, that are used to measure antennas for personal communications, military radar &amp; communications and spacecraft antennas.</td>
<td>Space Engineering, a management-owned SME incorporated in 1989, structured as Group comprising TeS-Teleinformatica e Sistemi. Core business of Space Engineering, is the Space market. SE operates at both system-level (performance/assessment/design) and equipment-level (HW/SW design &amp; Implementation).</td>
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<td>Nearfield Systems Inc. 19730 Magellan Drive Torrance, California, 90502 USA <a href="http://www.nearfield.com">www.nearfield.com</a> Booth Number 39 + 40</td>
<td>Thales Alenia Space is European leader reference in telecoms, radar and optical Earth observation, defense and security, navigation and science and space infrastructures and transportation. Thales Alenia Space is a joint venture between Thales (67 %) and Finmeccanica (33 %) and has 11 industrial sites in 4 European countries (France, Italy, Spain and Belgium) with over 7,200 employees worldwide.</td>
</tr>
<tr>
<td>NSI is a high technology company that manufactures systems, including positioners RF instrumentation and software, that are used to measure antennas for personal communications, military radar &amp; communications and spacecraft antennas.</td>
<td>Space Engineering S.p.A. Via dei Berio,91 00155 Roma ITALY <a href="http://www.space.it">www.space.it</a> Booth Number 8</td>
</tr>
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<td>Rohde &amp; Schwarz is Europe’s leading manufacturer of electronic test and measurement equipment. We offer a full range of microwave T&amp;M instruments up to 325 GHz including signal generators, spectrum analyzers, network analyzers and power meters.</td>
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Exhibitors & Sponsors

TICRA
Læderstræde 34
1201 Copenhagen K
DENMARK
www.ticra.com
Booth Number 32

TICRA develop and market the world renowned reflector antenna design software, GRASP, POS and CHAMP, as well as the measurement software, SNIFT. TICRA also provides expert consultancy services within the field of antenna design, installed performance and anomaly investigations.

VERTEX
ANTENNENTECHNIK GmbH
A General Dynamics Company
Baumstr. 46 - 50
47198 Duisburg
GERMANY
www.vertexant.de
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Offers precision ground station antennas/stations in the fields of satellite communications, remote sensing, TT&C, deep space missions, astronomy, including services as design/engineering, software development, in-plant integration, on-site installation, commissioning, acceptance testing, aftersales-services.

JAST Antenna Systems
PSE-EPFL, Bat. C
1015 Lausanne
SWITZERLAND
www.jastantenna.com
Booth Number 33

JAST Antennas, a ViaSat company, offers satellite antenna and phased array design, fabrication, installation and service, primarily for mobile satellite communications from L-band to Ka-band.

Wiley-Blackwell
600 North Bridge Road
#05-01 Parkview Square
Singapore 188778
www.wiley.com
Booth Number 12

Wiley-Blackwell are a leading international publisher of print and electronic products, specialising in scientific and technical books and journals. Visit our stand at EuCAP and view our new and bestselling books in the area.

WIPL-D d.o.o.
Gandijeva 7 apt 32
11073 Belgrade
SERBIA
www.wipl-d.com
Booth Number 22

WIPL-D, with its flagship software products WIPL-D Pro and WIPL-D Pro CAD, as well as consulting services, enables users worldwide to perform fast and accurate high-frequency simulations of antennas, microwave circuits, scatterers, EMC problems, antenna placement etc.

Technical Sessions – Overview

- Invited / Plenary speakers
- Antennas convened sessions
- Antennas regular sessions
- Measurements convened sessions
- Measurements regular sessions
- Propagation convened sessions
- Propagation regular sessions
- Poster sessions
- Workshops and other meetings
- Short courses
### Sunday – 10th April

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### Board of Directors

- EurAAP

### Short Courses

- EurAAP Working Group

### Conference opening

- Plenary speakers: J. Chazelas, C. Balanis, N. Engeta
- CA16 - User mobile terminal antennas
- CA18 - Metamaterial applications
- CA25 - New trends on MIMO Systems and smart antennas
- CA23 - Integral Techniques in Electromagnetics (INTELECT)
- CM1 - Pattern Comparison Techniques (AMTA session and Workshop)
- CP09-COST IC0802: Channel modelling for free space optical links
- CP09-COST IC0802: Channel modelling for free space optical links
- CP05 - Recent Advances in MIMO Systems: Channel Characterization and Antenna-Channel Interactions
- CA09 - Research challenges in RF exposure assessment
- CA10 - Research challenges in RF exposure assessment
- P01 - Rough surface and random media scattering
- P02 - Propagation in remote sensing
- CA12 - Rotor imaging and sensing
- CA12 - Rotor imaging and sensing
- CA23 - Small antennas (EurAAP Working Group)
- CA23 - Small antennas (EurAAP Working Group)
- Ansoft / Ansys Workshop I
- EUCAP ST C
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**Tuesday – 12th April**

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### Thursday – 14th April

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<td>A27 - New materials, metamaterials, EBG structures II</td>
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<td>CA21 - Innovative design and applications of reconfigurable antennas (COST IC0603 ASSIST)</td>
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<td>CA22 - Focusing systems, lenses, and reflectors</td>
<td>CA22 - Focusing systems, lenses, and reflectors</td>
<td>CA20 - Inverse problems and optimization techniques</td>
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The Complete Antenna Design and Placement Solution

FEKO includes several computational methods, each optimised for different problem types.

The Method of Moments and the Finite Element Method allow the analysis of a wide range of complex antennas. Hybridisation of these with asymptotic high frequency techniques allows the simulation of an antenna in their operating environment.

**Additional Applications:** Waveguide, RF components, Microstrip Circuits, EMC, Cable Coupling, Radomes, RCS, Bio-EM.

**Antenna Design:** The combination of FEKO and Antenna Magus, with its huge database of antennas, provides a smooth design and analysis workflow.

www.feko.info

Global sales and technical support network:
Local distributors in Europe, North America, South America, Japan, China, South Korea, Singapore, India, Israel, Taiwan, South Africa

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