

22ND ANNUAL IEEE INTERNATIONAL SYMPOSIUM ON PERSONAL,
INDOOR AND MOBILE RADIO COMMUNICATIONS



11-14 SEPTEMBER, TORONTO, CANADA

FINAL PROGRAM



IEEE



IEEE
COMMUNICATIONS
SOCIETY



UNIVERSITY OF
TORONTO

www.ieee-pimrc.org/2011

GENERAL INFORMATION • FLOOR PLAN

BADGES and TICKETS

IEEE PIMRC Badges must be worn at all times and are necessary for admittance to all IEEE PIMRC Sessions and Meal functions. (Tickets and Badges are needed for entry to the Tutorials, Workshops and Banquet)

SESSIONS

All IEEE PIMRC Sessions will take place at the Westin Harbour Castle

REGISTRATION

The IEEE PIMRC Registration Desk is located in the Frontenac Foyer on the Lower Level of the Convention Center

Sunday 11 September	8:00 – 17:30
Monday 12 September	7:30 – 17:00
Tuesday 13 September	8:00 – 17:00
Wednesday 14 September	8:30 – 12:00

LUNCHEON

Lunch will be served Monday - Wednesday in Frontenac on the Lower Level of the Convention Center. Badge is required for entry.

WiFi ACCESS

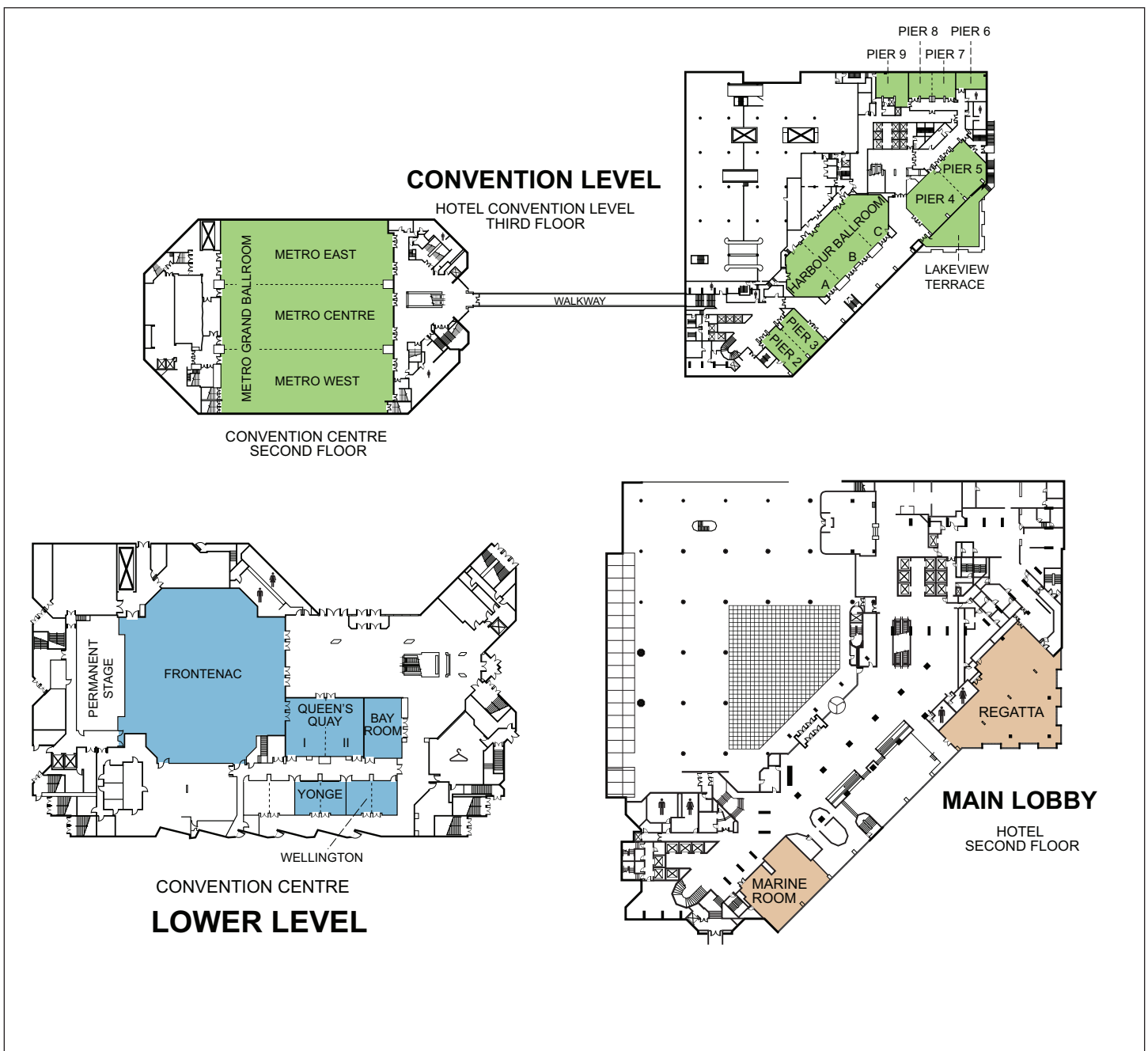
Complimentary WiFi Access will be available during conference hours in designated areas of the Westin Harbour Castle.

SAFETY PRECAUTIONS

As in many large cities worldwide, please exercise caution, care and awareness of your physical surrounding as you participate in nightly activities.

A FRIENDLY REMINDER

Please turn off anything that chirps, beeps, buzzes or rings, including but not limited to pagers, beepers, cell phones, PDA, laptops during the conference. The speakers and audience thank you for your consideration and cooperation.



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GREETINGS FROM THE GENERAL CHAIR



Kaveh Pahlavan

It is my honor and pleasure to welcome you to Toronto and the 22nd annual IEEE International Symposium on Personal Indoor and Mobile Radio Communications, marking its fifth occurrence in North America and the second occurrence in the Canada.

The first PIMRC convened, as an international symposium, at King's College, University of London in 1991 with fewer than 200 attendees. The first occurrence of the PIMRC in North America was in 1992 at Boston's Westin Hotel and it attracted 500 attendees, paving the way for the symposium to become one of the flagship wireless events for the IEEE Communications Society. For the past ten years PIMRC has met in various venues in Europe and the Far East returning this year to North America. We have tried our best to plan a very enjoyable and successful event that follows the pattern of our past successes in North America. To accomplish this objective, we attracted a number of distinguished keynote and invited speakers as well as panelists and workshop participants, representing key industry, academic and government organizations. We assembled a strong advisory board and organizing committees whose members have past successful experiences with PIMRC. We initiated a new effort for publicizing keynote speeches and

panel discussions through social networking and maintained a well-designed and informative website. We paid special attention to social events, the quality of dining and other services at the symposium in order to provide a relaxing environment for the exchange of technical information among researchers from around the world. The Westin Harbour Castle and numerous attractions in and around Toronto will provide a most attractive venue for this year's symposium. To encourage young researchers, the symposium has allocated several prizes for the selected papers written and presented by students and IEEE ComSoc has provided funding for several student travel grants.

PIMRC was formed in early 1990s, when new competing medium access technologies were being examined for the exponentially growing cellular telephone market and innovative WLAN transmission technologies were emerging for local wireless data applications. This situation made this event an important forum facilitating the growth of the industry to the extent that the symposium hosted the first technical presentation of CDMA systems by Qualcomm in PIMRC'91 and the first appearance of researchers in WLAN and mobile data communication services in PIMRC'92. Today, however, fundamental innovations in the design of physical and medium access control layer for wireless networks has reached its fruition and the wireless networking market is expanding into new popular applications in healthcare and transportation and new higher layer technologies for localization and security. This year, we have shaped our technical program to highlight the importance of these emerging technologies and applications as well as traditional wide area cellular and local area wireless networks.

We believe our strong technical program, the charm and attraction of Toronto as well as the special attention our organizing committee has given to the quality, the venue and the functions will create an enjoyable experience for all participants in the symposium. While you are in Toronto please take some time to experience this city, one of the finest in North America. Toronto offers natural beauties of Niagara Falls in its close proximity and numerous sightseeing, dining, shopping and entertainment opportunities inside the city. IEEE PIMRC 2011 will overlap with the Toronto International Film Festival, which will provide another opportunity to the attendees to also enjoy this major event.

Kaveh Pahlavan
General Chair PIMRC'11

MESSAGE FROM THE TECHNICAL PROGRAM CHAIR



Shahrokh Valaee



Elvino Sousa

It is a great honor to welcome you to the 22nd IEEE Personal, Indoor, Mobile, Radio Communication Symposium 2011 in Toronto. IEEE PIMRC is coming to North America after a long absence and we have made all efforts to make this return a successful one.

There has been a great deal of progress in the field of wireless communications since the founding of PIMRC. We have gone through several generations of technology for public access wireless networks. In terms of technology development and adoption by the market, the field of wireless communications has matured to the current ubiquity of smart phones and mobile voice and data services. From another standpoint, however, the field is at a cross-road in terms of the development of technology required to fulfill the large capacity demands required for evolving services. The development of the various technology generations has been based on a common paradigm of the

deployment of somewhat regular cells with the emphasis on the maximization of spectral efficiency for the associated modulation and multiple access schemes. Going forward, however, vastly larger numbers of cells are required and the techniques for cell deployment and adaptation to traffic versus location become more important. Also, other wireless applications such as indoor position location are becoming increasingly important. To accommodate these emerging themes we have restructured the conference tracks away from the traditional layer based structure. The conference is organized into the following tracks: Wide area cellular communication (WACC), focusing on techniques to increase physical layer spectral efficiency through modulation and signal processing techniques; Autonomous infrastructure deployment (AID) focusing on emerging organic techniques to facilitate the deployment of large numbers of small cells; Local and personal area networks (LPAN) which concentrates on communication on short distances; Cognitive Radio and spectrum management (CRSM) which addresses issues in adaptability of use of spectrum; and Security and Localization (SL). In addition, we have the following application-oriented tracks: Intelligent transportation networks (ITN), and Wireless networks and health care (WNHC).

Besides the rich program of technical sessions in the above tracks, PIMRC 2011 has invited ten excellent plenary and keynote speakers. In the tradition of PIMRC, these speakers have been selected with an equal emphasis on the industry and academia sectors. IEEE will webcast and tape for archiving and later viewing the plenary and keynote sessions..

As TPC Co-Chairs and organizers of the conference, we are indebted to all our Executive Committee Members, in particular our Track Chairs, Tutorial, Workshop and Panel Chairs, our reviewers, and our local organizing committee members, who devoted their time and service to the conference. Without their generous help the conference would not have been successful.

IEEE PIMRC is being held in one of the most cosmopolitan cities in the world with a lot of attractions to offer our attendees and their accompanying family members. Toronto is a city in which more than 100 languages are spoken daily. No matter where you are coming from, you can sure find a cuisine that fits to your taste. While in Toronto, please check the Toronto International Film Festival, one of the largest in the world, visit CN Tower, the world's tallest free standing structure until 2010, and walk on the glass floor, and extend your stay after the conference for a visit to Niagara Falls and Niagara-on-the-lake.

We welcome you all to Toronto and hope you will enjoy the conference.

Shahrokh Valaee and Elvino Sousa
TPC Chairs PIMRC'11

EXECUTIVE COMMITTEE

General Chair**Kaveh Pahlavan** (WPI, USA)**TPC Chairs****Shahrokh Valaee** (University of Toronto, Canada)**Elvino Silveira Sousa** (University of Toronto, Canada)**Tutorial Chairs****Abbas Jamalipour** (University of Sydney, Australia)**Victor CM Leung** (The University of British Columbia, Canada)**Hussein Mouftah** (University of Ottawa, Canada)**Workshop Chairs****Savo Glisic** (University of Oulu, Finland)**Ian Oppermann** (CSIRO ICT Centre, Australia)**Panel Chairs****Luis M. Correia** (IST - Technical University Lisbon, Portugal)**Yves Lostanlen** (SIRADEL, Canada)**Student Travel Grant Chairs****John Proakis** (Northeastern University, USA)**Masoud Salehi** (Northeastern University, USA)**Invited Papers Chair****Vahid Tarokh** (Harvard University, USA)**Wide Area Cellular Communications Track Chairs****Sofiene Affes** (INRS-EMT, Canada)**Benoit Champagne** (McGill University, Canada)**Hamid Jafarkhani** (University of California, Irvine, USA)**Autonomous Infrastructure Deployment Track Chairs****Elvino Silveira Sousa** (University of Toronto, Canada)**António J. Rodrigues** (IT / Instituto Superior Técnico, Portugal)**Rath Vannithamby** (Intel, USA)**Local and Personal Area Networks Track Chairs****Xinrong Li** (University of North Texas, USA)**Ben Liang** (University of Toronto, Canada)**Zoran Zvonar** (Media Tek, USA)**Security and Localization Track Chairs****Wenjing Lou** (Virginia Tech, USA)**Nader Moayeri** (NIST, USA)**Ivan Stojmenovic** (University of Ottawa, Canada)**Intelligent Transportation Networks Track Chairs****Soumaya Cherkaoui** (Université de Sherbrooke, Canada)**Yaser P. Fallah** (West Virginia University, USA)**Hossein Pishro-Nik** (University of Massachusetts, USA)**Wireless Networks and Health Care Track Chairs****Ryuji Kohno** (Yokohama National University, Japan)**Kamran Sayrafian** (NIST, USA)**Kamyar Yekeh Yazdandoost** (National Institute of Information and Communications Technology, Japan)**Cognitive Radio and Spectrum Management Track Chairs****Alagan Anpalagan** (Ryerson University, Canada)**Ekram Hossain** (University of Manitoba, Canada)**Long Bao Le** (University of Quebec, Canada)**Publication and Website Chair****Petar Djukic** (Communications Research Centre, Canada)**General Advertisement Chair****Muzaffer Kanaan** (Erciyes University, Turkey)**Publicity Chair and Liaisons****Hsiao-Hwa Chen** (National Cheng Kung University, Taiwan)**Matti Latva-aho** (UoOulu, Finland)**Seyed (Reza) Zekavat** (Michigan Technological University, USA)**Wireless Health Liaison****Jalal Mapar** (USA)**Local Arrangements****Jennifer Rodrigues** (University of Toronto, Canada)**Sameh Sorour** (University of Toronto, Canada)**Le Zhang** (University of Toronto, Canada)**Finance Chair****Bruce Worthman** (IEEE Communications Society, USA)**IEEE ComSoc Liaison****Debora Kingston** (IEEE Communications Society, USA)

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Monday, 12 September • 8:30 – 10:00
Room: Frontenac, Convention Center Lower Level

CONFERENCE OPENING AND PLENARY TALK



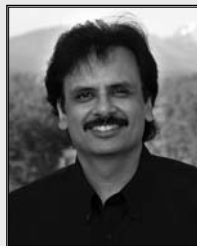
David G. Belanger
AT&T Labs Chief Scientist

Dave Belanger is the AT&T Labs Chief Scientist, and the Vice President of Information & Software Systems Research. As Chief Scientist, he is responsible for identifying pre-product technology important to the future of AT&T, evaluating technology, building alignment within AT&T on technology directions, and serving as AT&T liaison to external technical communities, specifically universities, government agencies, and industry laboratories.

The Information & Software Systems Research Lab conducts research in largescale and real-time information mining related to operations of a (communications) service business; interactive, information visualization; scalable, reliable software systems; and new, information-based, communications services. It is also responsible for delivery and operations of very large-scale (e.g. >300TB), near real-time service management capabilities to AT&T and its customers. Dave joined AT&T Bell Laboratories in 1979 working in the area of database support for economic analysis for product lifecycles, later researching large-scale data and information systems, and program generation for data manipulation systems. He has subsequently led research efforts in software systems and engineering, and information mining, and visualization.

Prior to joining AT&T, Dave was on the Mathematics and Computer Science Faculty at University of South Alabama, a consultant for a variety of companies, and co-founder/VP of Gulf Coast Data Systems (a computing services company). He received his B.S. from Union College (NY) in Mathematics, and an M.S. and Ph.D., also in Mathematics, from Case Western Reserve University.

Dave was named AT&T Fellow in 2006 honored for a lifetime of outstanding and world-class contributions in the fields of software tools, software systems and information mining. In 2009, Dave received the IEEE Communications Society Industrial Innovation Award for pioneering, innovating, and leading the interdisciplinary execution of information systems that transform massive online data streams into actionable information for service businesses.



Victor Bahl
Director of the Mobile Computing Research Center at Microsoft

Victor Bahl is the Director of the Mobile Computing Research Center (MCRC). MCRC's mission is to invent technologies that make Microsoft's mobile devices and services indispensable to the world. The Center focusses on basic and applied research in all areas related to mobile computing -- emphasis is on inter-disciplinary research where researchers from different disciplines join forces to work on hard problems, build proof-of-concept systems, engage with academia, publish scientific papers, publish software for the research community, and transfer cutting-edge technologies to Microsoft's product divisions. Prior to MCRC, Victor founded the Networking Research Group and served as its manager for 8 years. He continues to help shape Microsoft's long-term vision related to networking technologies through research and associated policy engagement with governments and institutions around the world. His personal research interests span a variety of topics in mobile computing, wireless systems design, cloud services and datacenter / enterprise networking & management. He has built and deployed several seminal and highly cited networked systems, with over 12,500 citations; he has authored over 120 peer-reviewed papers and 130 patent applications, 76 of which have been issued; he has won best paper awards at SIGCOMM and CoNext and has delivered over two dozen keynote & plenary talks; he is the founder and past Chairperson of ACM SIGMOBILE, the founder and steering committee chair of the MobiSys; and the founder and past Editor-in-Chief of ACM Mobile Computing and Communications Review. He has served as the General Chair of several IEEE and ACM conferences including SIGCOMM and MobiCom, and is serving on the steering committees of seven IEEE & ACM conferences & workshop, several of which he co-founded; he has been serving as the chair of ACM's Outstanding Contributions Award committee related to mobility for over fifteen years. He has served on the board of over half-a-dozen journals; on several NSF, NRC and FCC panels, and on over six dozen program committees. Dr. Bahl has served as IEEE Communications Society's Distinguished Lecturer (2007-09) and ACM's Distinguished Speaker (2007-10). He received Digital's Doctoral Engineering Fellowship Award in 1995 and SIGMOBILE's Distinguished Service Award in 2001. In 2004, Microsoft nominated him for the innovator of the year award. He received Microsoft's Individual Performance Award, given to the highest performing employees in 2007 & 2010. He became an ACM Fellow in 2003, an IEEE Fellow in 2008 and a AAAS Fellow in 2010. Also in 2010 he received the IEEE Northwest Region 6 Outstanding Engineer Award. When not working, he loves to read, travel, eat in fine restaurants, watch competitive sports and action movies, and spend time drinking with friends and family..

PLENARY & KEYNOTES SESSIONS - MONDAY, 12 SEPTEMBER

Monday, 12 September • 13:30 - 14:30
Room: Harbour A, Hotel Convention Level 3rd Floor

KEYNOTE SESSIONS



KEYNOTE 1:

P .R. Kumar

Franklin W. Woeltge Professor of Electrical and Computer Engineering at University of Illinois, Urbana-Champaign

P. R. Kumar is at the University of Illinois, Urbana-Champaign, where he is Franklin W. Woeltge Professor of Electrical and Computer Engineering, Research Professor in the Coordinated Science Laboratory, Research professor in the Information Trust Institute, and Affiliate Professor of the Department of Computer Science.

He obtained his B. Tech. degree in Electrical Engineering(Electronics) from I.I.T. Madras in 1973, and the M.S. and D.Sc. degrees in Systems Science and Mathematics from Washington University, St. Louis, in 1975 and 1977, respectively. From 1977-84 he was a faculty member in the Department of Mathematics at the University of Maryland Baltimore County.

He has worked on problems in game theory, adaptive control, stochastic systems, simulated annealing, neural networks, machine learning, queueing networks, manufacturing systems, scheduling, wafer fabrication plants and information theory. His current research interests are in wireless networks, sensor networks, and networked embedded control systems.

He has received the Donald P. Eckman Award of the American Automatic Control Council, the IEEE Field Award in Control Systems, and the Fred W. Ellersick Prize of the IEEE Communications Society. He is a Fellow of the IEEE, and a member of the US National Academy of Engineering. He has been awarded an honorary doctorate by ETH, Zurich. He was awarded a Guest Chair Professorship at Tsinghua University, Beijing. He is also the Lead Guest Chair Professor of the Group on Wireless Communication and Networking at Tsinghua University, Beijing. He is an Honorary Professor at IIT Hyderabad. He has received the Daniel C. Drucker Eminent Faculty Award of the College of Engineering, University of Illinois at Urbana-Champaign, and the Alumni Achievement Award of Washington University in St. Louis.

Monday, 12 September • 13:30 - 14:30
Room: Harbour C, Hotel Convention Level 3rd Floor

KEYNOTE SESSIONS



KEYNOTE 2:

Ted Rappaport

William and Bettye Nowlin Chair in Engineering at the University of Texas at Austin

Ted Rappaport is the William and Bettye Nowlin Chair in Engineering at the University of Texas at Austin, and is the founding director of the Wireless Networking and Communications Group (WNCG), a center he founded in 2002. He is also the director of the NSF I/UCRC Wireless Internet Communications and Advanced Technologies (WICAT) center site at The University of Texas, Austin. Prior to joining UT Austin, he was on the electrical and computer engineering faculty of Virginia Tech from 1988 to 2002, where he founded the Mobile and Portable Radio Research Group (MPRG), one of the world's first university research and teaching centers dedicated to the wireless communications field. Prof. Rappaport has been a pioneer

in the fields of radio wave propagation, wireless communication system design, and broadband wireless communications circuits and systems at millimeter wave frequencies. His research has influenced many international wireless standard bodies over the past few decades, and his work has led to the broad acceptance of site-specific radio frequency (RF) design and deployment for broadband wireless networks. Dr. Rappaport has served on the Technological Advisory Council of the Federal Communications Commission (FCC), assisted the Governor and CIO of Virginia in formulating rural broadband initiatives for internet access, and has conducted research for NSF, DoD, and dozens of global telecommunications companies throughout his career. He is one of the most highly cited authors in the wireless field according to ISI Highly Cited, having published over 200 technical papers. Rappaport has over 100 U.S. or international patents issued or pending and has authored, co-authored, and co-edited 18 books in the wireless field, including *Wireless Communications: Principles & Practice* (now in its 2nd edition, translated into 6 languages), *Principles of Communication Systems Simulation with Wireless Applications*, and *Smart Antennas for Wireless Communications: IS-95 and Third Generation CDMA Applications*. In 1999, his work on site-specific propagation received the IEEE Communications Society Stephen O. Rice Prize Paper Award. In 1989, he founded TSR Technologies, Inc., a cellular radio/PCS software radio manufacturer that he sold in 1993 to what is now CommScope, Inc. In 1995, he founded Wireless Valley Communications Inc., a pioneering creator of site-specific radio propagation and network management software that he sold in 2005 to Motorola, Inc. He received B.S., M.S., and Ph.D. degrees in electrical engineering from Purdue University in 1982, 1984, and 1987, respectively, and is an Outstanding Electrical Engineering Alumnus from his alma mater.

Tuesday, 13 September • 8:30 – 10:00
Room: Frontenac, Convention Center Lower Level

PLENARY TALK



Henry Tirri

Head of Nokia Research Center, Interim CTO

Dr. Henry Tirri is SVP and Head of Nokia Research Center (NRC). NRC drives breakthroughs to enable new business opportunities for Nokia. Henry is responsible for 13 labs worldwide that pursue disruptive innovation and work closely with all Nokia operating units to promote open innovation, working on research projects in collaboration with leading global universities and research institutes.

Henry holds a Ph.D. in Computer Science from the University of Helsinki, Finland and joined Nokia in 2004 as a Research Fellow in the Software and Applications Laboratory. Previous positions include working as a MTS at AT&T Bell Laboratories and Visiting Scientist at NASA AMES where he contributed to the Mars Rover for the 2003 mission. He is the author and co-author of more than 175 academic papers on computer science, social sciences and statistics and holds five patents.



Wen Tong

Vice president of Wireless Research and CTO of Wireless of Huawei Technologies Co.,Ltd.

Dr. Wen Tong is the vice president of Wireless Research and CTO of Wireless of Huawei Technologies Co.,Ltd. Prior to joining Huawei in March 2009. Dr. Wen Tong was the Nortel Fellow and Head of the Network Technology Labs at Nortel. He received the M.Sc and Ph.D degrees in Electrical Engineering in 1986 and 1993 and joined the Wireless Technology Labs at Bell Northern Research in 1995. He has pioneered fundamental technologies in wireless with 110 granted US patents and more than 200 patents filings.

Dr. Tong has conducted the advanced research work spanning from 1G to 4G wireless at Nortel. From 1997 to 1999, he was responsible for the prototyping of advanced CDMA technology which led industry's first 3G wireless packet data sessions using CDMA2000 1xRTT technology in the field. He was one of the critical inventors of turbo coding interleaver, a key enabler that boosts speed and efficiency of 3G networks, which has been adopted for all 3G/4G standards. From 1998 to 2006, he had been a driving force in developing foundational technologies for all the 4G wireless networks—OFDM-MIMO. He is an industry-recognized pioneer on OFDM-MIMO. He has been a key contributor and initiator to 3GPP (UMTS and LTE), 3GPP2 (CDMA 1xRTT 1xEV-DO and UMB), and IEEE802.16e (WiMAX), IEEE802.16j (Mobile Multi-Hop Relay) standards. In 2006, and 2007, his team was twice-winner of Nortel Technology Excellent Award (highest level R&D award). Since 2007, Dr. Tong had been the director of Wireless Technology Labs, to lead the advanced research on next generation broadband wireless mobile systems in the area Gigabit RAN and unwired enterprise networks, frequency agile radio system, advanced antenna system and broadband wireless self backhaul system. In 2008, Dr. Tong was the head of Network Technology Labs, responsible for Nortel's global strategic technologies research and development. He was member of Executive Edge team.

In 2007, Dr. Tong was inducted as Nortel Fellow, a lifetime honor bestowed to selected 5 individuals in Nortel's R&D community in Nortel's 114 years history. Dr. Tong was Nortel's most prolific inventor and the creator of Nortel LTE patent portfolio.

Currently, Dr. Tong is based in Huawei Technologies Ottawa R&D Center.

PLENARY & KEYNOTES SESSIONS - TUESDAY, 13 SEPTEMBER

Tuesday 13 September • 13:30 - 14:30
Room: Harbour A, Hotel Convention Level 3rd Floor

KEYNOTE SESSIONS



KEYNOTE 1:

Dipankar Raychaudhuri

Professor-II, Electrical & Computer Engineering and Director, WINLAB, Rutgers University

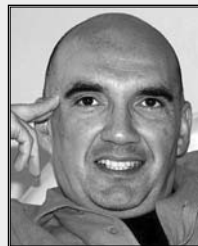
Dipankar Raychaudhuri is Professor-II, Electrical & Computer Engineering and Director, WINLAB (Wireless Information Network Lab) at Rutgers University. As WINLAB's Director, he is responsible for an internationally recognized industry-university research center specializing in wireless technology. WINLAB's current research scope includes topics such as RF/sensor devices, cognitive radio, dynamic spectrum access, 4G systems, wireless security, future Internet architecture, and pervasive computing. His research group at WINLAB has been working on design and implementation of next-generation wireless networks covering a number of emerging usage scenarios such as ad hoc mesh, vehicular, cognitive radio, 4G and mobile Internet. He is the principal investigator for several multi-institutional projects funded by the US National Science Foundation (NSF) including: "ORBIT" open-access next-generation wireless network testbed, "CogNet" cognitive radio network, and most recently, the "MobilityFirst" future Internet architecture (FIA) project. He also helped to initiate the ongoing GENI program for deployment of a global-scale experimental infrastructure for Internet research, and is currently leading the "Open GENI Base Station" project aimed at deploying programmable 4G wireless networks at several university campuses across the US.

He has previously held progressively responsible corporate R&D positions in the telecom/networking industry including: Chief Scientist, Iospan Wireless (2000-01), Assistant General Manager & Dept Head-Systems Architecture, NEC USA C&C Research Laboratories (1993-99) and Head, Broadband Communications Research, Sarnoff Corp (1990-92).

Dr. Raychaudhuri obtained his B.Tech (Hons) from the Indian Institute of Technology, Kharagpur in 1976 and the M.S. and Ph.D degrees from SUNY, Stony Brook in 1978, 79. He is a Fellow of the IEEE.

Tuesday 13 September • 13:30 - 14:30
Room: Harbour B, Hotel Convention Level 3rd Floor

KEYNOTE SESSIONS



KEYNOTE 2:

Sergio Verdú

Eugene Higgins Professor of Electrical Engineering at Princeton University

Sergio Verdú is the Eugene Higgins Professor of Electrical Engineering at Princeton University where he teaches and conducts research on information theory in the Information Sciences and Systems Group. He is also affiliated with the Program in Applied and Computational Mathematics.

A native of Barcelona, Spain, Sergio Verdú received the Telecommunications Engineering degree from the Universitat Politècnica de Barcelona, Barcelona, Spain, in 1980 and the Ph.D. degree in Electrical Engineering from the University of Illinois at Urbana-Champaign in 1984. Conducted at the Coordinated Science Laboratory of the University of Illinois, his doctoral research pioneered the field of Multiuser Detection.

Sergio Verdú was elected Fellow of the IEEE in 1992 and member of the U. S. National Academy of Engineering in 2007. He received the 2000 Frederick E. Terman Award from the American Society for Engineering Education, and the IEEE Third Millennium Medal in 2000. In 2005, he received a Doctorate Honoris Causa from the Universitat Politècnica de Catalunya. He is the recipient of the 2007 Claude E. Shannon Award, and the 2008 IEEE Richard W. Hamming Medal.

In 1998, Cambridge University Press published his book "Multiuser Detection." His papers have received several awards: the 1992 IEEE Donald Fink Paper Award, the 1998 Information Theory Outstanding Paper Award, a IEEE Information Theory Golden Jubilee Paper Award, the 2000 Paper Award from the Japan Telecommunications Advancement Foundation, the 2002 Leonard G. Abraham Prize Award in the field of Communications Systems and the 2007 IEEE Joint Communications/Information Theory Paper Award.

Sergio Verdú served as Associate Editor for Shannon Theory of the IEEE Transactions on Information Theory. He served as President of the IEEE Information Theory Society in 1997. He is currently Editor-in-Chief of Foundations and Trends in Communications and Information Theory.

He has held visiting appointments at the Australian National University, the Technion-Israel Institute of Technology, and the University of Tokyo. In 1998 he was Visiting Professor at the Electrical Engineering and Computer Science Department of the University of California, Berkeley, and in 2002 he held the Hewlett-Packard Visiting Research Professorship at the Mathematical Sciences Research Institute, Berkeley.

PLENARY TALK - WEDNESDAY 14, SEPTEMBER

Wednesday, 14 September • 8:30 – 10:00
Room: Frontenac, Convention Center Lower Level

PLENARY TALK



Jalal Mapar

Program Manager
U.S. Department of Homeland Security, Science & Technology Directorate

Jalal Mapar is a Program Manager at the DHS Science and Technology Directorate. He manages a portfolio of S&T programs that provide capabilities for the nation's emergency preparedness and response community. His portfolio primarily focuses on technologies for First Responders: location and health monitoring and Integrated Modeling, Mapping, and Simulation, Training and Exercise, and Incident Management Enterprise systems. Since joining he has led the development of an advanced breaching tool (selected by Popular Science as one of the 2008 Innovations of the Year), and innovative concealable escape hood, and started S&T's 3-D Location Tracking and the Physiological Monitoring systems. Prior to joining DHS in 2005, Mr. Mapar was a VP/Division Manager in the RDT&E Group at SAIC in McLean, VA. He holds a B.S. and M.S. in Aerospace Engineering from the University of Texas at Austin and has over 30 journals/conference publications in advanced technology topics.



Ryuji Kohno

Professor at Yokohama National University, Japan,
University of Oulu, Finland

Ryuji Kohno received the Ph.D. degree from the University of Tokyo in 1984. Since 1998 he has been a Professor of the Division of Physics, Electrical and Computer Engineering, and the Director of Center on Medical Information and Communication Technology, in Yokohama National University in Japan. In his career he was a director of Advanced Telecommunications Laboratory of SONY CSL during 1998-2002, a director of UWB Technology institute of National Institute of Information and Communications Technology (NICT) during 2002-2006, and a program coordinator of Medical ICT institute of NICT since 2006.

In his academic activities, he was elected as a member of the Board of Governors of IEEE Information Theory (IT) Society in 2000, 2003 and 2006.

He has played a role of an editor of the IEEE Transactions on IT, Communications, and Intelligent Transport Systems (ITS). He is a fellow of IEICE, and has been vice-president of Engineering Sciences Society of IEICE, the Chairman of the IEICE Technical Committee on Spread Spectrum Technology, that on ITS, and that on Software Defined Radio (SDR). Prof. Kohno has contributed for organizing many international conferences, such as an chair-in honor of 2002 & 2003 International Conference of SDR (SDR02 & SDR03), a general co-chair of 2003 IEEE International Symposium on IT (ISIT03), UWBST&IWUWB04, IWUWBST05, 2006, 2007&2010 International Symposium on Medial ICT (ISMICT2006, 2007, 2010, 2011), 2010 Joint International Symposia on Information Theory and Its Applications (ISITA2010) and on Spread Spectrum Technology and Applications (ISSSTA2010). He was awarded IEICE Greatest Contribution Award and NTT DoCoMo Mobile Science Award in 1999 and 2002, respectively.

Since 2007, he became a Finnish Distinguished Professor (FidiPro). Currently he is in charge of Global COE (Centre of Excellence) program on "Innovative Integration between Medicine and Engineering Based on ICT," in MEXT, Japan to promote joint research and education between Finland and Japan for five years.

Monday, September 12 • 10:30 – 12:00

Room: Frontenac, Convention Center Lower Level

Panel 1: Femtocells & WiFi: Towards Cost Efficient Ubiquitous Broadband

Organizer/Chair: Thierry Lestable, SAGEM Communications, France

Panelists: Emilio Mino Diaz, Telefonica I+D, Spain

Prabhakar Chitrapu, InterDigital, USA

Rahim Tafazolli, University of Surrey, UK

Matti Latva-aho, University of Oulu, Finland

Nicolas Gresset, Mitsubishi Electric R&D Center Europe, France

Femtocells and WiFi technologies are still seen by many as competitive approaches both providing cost efficient solutions for offloading traffic and thus solving capacity crunch resulting from exponentially growing data demand. However, for a whilst now, another alternative, originating from Femto Forum, and pushed also in 3GPP standard, is claiming benefits resulting from a joint Femto+WiFi integration, and interworking. IP Flow Management, and seamless intersystem handovers, resulting in cost efficient Offloading techniques are among the many potential benefits that are going to be discussed during this panel.

Monday, September 12 • 14:30 – 16:00

Room: Frontenac, Convention Center Lower Level

Panel 2: Standardization, Technology, and Challenge For Body Area Network

Organizer/Chair: Huan-Bang Li, Institution: NICT, Japan

Panelists: David Davenport, GE Global Research., USA

Arthur Astrin, Chair of Task Group 6, IEEE 802.15, USA

Anuj Batra, Texas Instruments, USA

Leif Hanlen, NICTA, Australia

Body area network (BAN) is a promising wireless technology that realizes wireless connectivity among vital signal sensors deployed on human body. Monitoring various vital signals collected through BAN provides an efficient way to lower disease occurrence rate and reduce medical expenditure. An international standard, IEEE 802.15.6, will be approved within several months. In this panel session, we will elaborate the BAN standardization; discuss technologies and challenges for practical use of BAN to provide a full picture of this new wireless technology to the audience.

Tuesday September 13 • 10:30 – 12:00

Room: Frontenac, Convention Center Lower Level

Panel 3: Which will be the Winning Technologies for the Networks of the Future?

Organizer/Chair: Luis M. Correia, University of Lisbon, Portugal

Panelists: Marcus Brunner, NEC Laboratories, Heidelberg, Germany

Hamid Aghvami, King's College – University of London, UK

Dipankar Raychaudhuri, WINLAB/Rutgers University, USA

Henry Tirri, Nokia Research Center, USA)

It's already a common place that current communications networks cannot cope with the challenges that are ahead concerning the Future Internet, in terms of the volume of data being accessed and transported, the services and applications that will be made available, and the number of devices that will be connect, among other aspects. The evolution of IP, with its many patches, has proved not to be the solution, and many developments are on the way, concerning the radio interface and radio networks, on the one hand, and the architecture of networks and transport of data, on the other. Approaches like the virtualization of networks, information centric networks, cloud computing and networking, self-network management, and connectivity services are among the many techniques being currently developed, aiming at contributing to give the answer to the problems raised by the Future Internet. Some constraints need to be considered as well, e.g., security and privacy, energy efficiency, feasible business models, and inclusion of user's characteristics. With all these ingredients, one may discuss which areas will really be deployed, and which will be left on the way for one reason or another. This panel will address these issues, discussing the developments for the networks of the future, and their potential impact.

Tuesday, September 13 • 14:30 – 16:00

Room: Frontenac, Convention Center Lower Level

Panel 4: Heterogeneous Networks

Chair: Laurent Roullet, (Alcatel-Lucent Bell Labs, France)

Panelists: Pantelis Monogioudis, (Alcatel Lucent Bell Labs)

Ekram Hossain, (University of Manitoba, Canada)

Villarciaux Yves Lostanlen, (Siradel, Canada)

The panel will try to illustrate heterogeneous networks diversity as follows: 1) What defines specifically a heterogeneous network? 2) Why are hetnet so important in the current context of wireless data brisk increase? 3) What are their main technical challenges? 4) Are they just a transition point or a destination for incumbent operators, an opportunity or a drawback for greenfield operators?

Wednesday, September 14 • 10:30 – 12:00

Room: Frontenac, Convention Center Lower Level

Panel 5: How to Make Mobile Cellular Communications Even Greener?

Organizer/Chair: Luis M. Correia University of Lisbon, Portugal

Panelist: Mohamed Cheriet, École de Technologie Supérieure –University of Quebec, Canada

Magnus Olsson, Ericsson, Sweden

Matti Latva-aho, University of Oulu, Finland

Roberto Fantini, Telecom Italia Labs., Italy

It is expected that the volume of data transmitted in mobile cellular networks will double each year in the next decade, which means that the energy consumption of these networks will also increase a lot. On the one hand, this increase puts obvious concerns, but on the other, it also means that there will be many other sectors reducing their CO2 footprint via an increased usage of ICT in general, and of mobile and wireless communications in particular. Still, the pressure to reduce the energy consumption in communications networks is already a current challenge, being addressed by many people in industry and academia, namely because it can contribute to reduce the cost of running a network. New technologies and solutions are being explored, and inputs to standards are already a reality. An overall perspective is required, ranging from equipment in base stations to network protocols, and encompassing radio resource management and network architectures, among many other areas. Furthermore, it may happen that the increase of user data rates or quality of experience may lead to an effective increase in energy consumption, which needs to be dealt with in a proper perspective. This panel will address these issues, tackling both near- and long-term views of the matter.

Wednesday, September 14 • 13:30 – 15:00

Room: Harbour B, Hotel Convention Level, Third Floor

Panel 6: Mobile Internet for the Emerging Economies

Organizer/Chair: Sudhir Dixit, HP Labs India, India

Session Chair and Moderator: Roch Glitho, Concordia University, Canada

Panelists: Catherine Rosenberg, University of Waterloo, Canada

Hussein Mouftah, University of Ottawa, Canada

This panel aims at discussing the recent advances and strategies in developing mobile and wireless technologies for Internet access using mobile phones to meet the unique requirements of the developing countries. Because of the poor or nonexistent wire line access infrastructure and the huge growth in mobile subscriptions, these countries are well-positioned to go through a period of significant growth in broadband mobile access, and are likely to skip the wired broadband access altogether. In this panel, the experts demystify if the requirements in the emerging economies are really different from those in the developed economies, and if so, how these are being addressed in the various standards bodies, who the key players are, and how the future mobile Internet designers and developers should take those into consideration. The stakes are quite high since by year 2015 there would be over 4 billion mobile users in the developing countries alone with the fastest growth rate of the wireless broadband Internet. Although the panel also addresses the policy and strategy issues in many of these countries, a central question that would be deliberated is to what extent the Future Mobile Internet as conceived today in ETSI, ITU, and the various industry fora, is driven by the requirements of these countries. A more provocative question is: Whether these organizations are even aware of and making efforts to ensure that the unique requirements of the vast majority of these users are taken into consideration – after all these are going to be the largest growth markets!

Sunday 11 September 2011 • 9:00 – 12:30
Room: Pier 4, Hotel Convention Level 3rd Floor

T1: Interference Management in Femtocell Networks

Presenters: Ekram Hossain, University of Manitoba, Canada

Long Bao Le, INRS-EMT, University of Quebec, Canada

The evolving femtocell networks are envisioned to provide improved capacity and coverage in next generation cellular wireless systems. A recent study estimates that by 2012, there could be around 70 million femto access points (FAPs) installed in homes or offices around the world, serving more than 150 million customers. However, femtocell deployments pose many challenges among which interference management is the most significant one. The aim of this tutorial is to provide an extensive overview of the interference management problem in femtocell networks considering both CDMA (e.g., 3G) and OFDMA (e.g., LTE, WiMAX) femtocells, and the state-of-the-art research on this topic. After a brief overview of the femtocell networks, we outline the major challenges in successful deployment of femtocells in next generation cellular wireless systems. In particular, the challenges related to co-tier and cross-tier interference management, mobility and handoff management, auto-configuration, timing and synchronization, and security are discussed. Then we provide a comprehensive overview of the different state-of-the-art techniques for interference management in femtocell networks. In this context, the interference modeling approach based on the shot-noise theory is also discussed. We consider both CDMA and OFDMA femtocells and two different approaches for these systems are described in detail. To this end, we outline several major open research issues and directions for future research on interference management and self-reconfiguration in femtocell networks.

Sunday 11 September 2011 • 10:00 – 12:30
Room: Pier 5, Hotel Convention Level 3rd Floor

T3: Localization and Communication - Theory, Algorithms and Benefits of Localization in Wireless Networks

Presenters: Giuseppe Abreu, Giuseppe Destino

Davide Macagnano, University of Oulu, Finland

This Tutorial offers a comprehensive view of technological and theoretical aspects of localization algorithms in connection with wireless communication networks. We start under the motivation of recent trends in wireless communications which point to an increasingly important role of location information both as the key parameter for new applications (such as personal navigation) and as a universal token of cognitivity which can be exploited to optimize wireless communication systems. After a brief categorization the localization problem according to the two major mathematical formulation paradigms, we discuss in concrete strategies to apply location information to the advantage of efficient communications, as well as analytical tools utilized to quantify the corresponding benefits and costs.

Amongst other topics, the utilization of stochastic geometric tools in network models, novel results on the statistics of multihop distances, auction theoretic location-aware relay selection mechanisms, and global network performance metrics such as transport capacity, transmit capacity and information efficiency are covered. Having clearly established the potential benefits of the utilization of location information in wireless systems, and quantified the corresponding communication costs involved, we then turn our attention to a deep discussion of state-of-the-art and further advanced localization algorithm.

In particular, the elementary types of data that can be exploited to produce location information, namely, connectivity, spatial correlation measures, angle information and finally, distance information are first addressed.

Next, we review the most common and best-performing class of localization methods, namely distance-based algorithms, with a particular focus on the network localization application where devices are able to communicate with several other devices in their neighborhood (mesh topologies), such as in ad hoc, sensor, and future cooperative networks. Several of the most important and recently proposed approaches are described in detail, including the semidefinite and linear programming methods, gradient-based smoothed and majorized methods, as well as algebraic methods. In the sequel, the most relevant additional issues afflicting network localization systems, such as flip-ambiguity, LOS/NLOS conditions, the lack of absolute reference, and the choice between centralized and distributed approaches, are discussed.

Finally, fundamental limits are reviewed and used to compare and assess the accuracies of the algorithms described. Through a comprehensive review of both theory and practical algorithms, and a keen eye on the interconnections between localization and communication, the tutorial addresses the subject with timely and solid review of contributions in the area of localization for and in wireless communication networks.

Sunday 11 September 2011 • 14:00 – 17:30
Room: Pier 4, Hotel Convention Level 3rd Floor

T2: Interference Alignment: A New Look at Signal Dimensions in Interference Networks

Presenter: Syed Ali Jafar, University of California-Irvine, USA

Interference is the primary bottleneck on the data rate capacity of most wireless and many wired networks. The recent emergence of the idea of interference alignment has shown that the throughput limits of interference networks may be orders of magnitude higher than previously imagined. In a relatively short period of three years since its emergence, the idea has gained tremendous momentum in research pursued by industry as well as the academia within the network information theory, communication theory, signal processing, and network coding communities and has produced an array of surprising and fundamental insights into the number of accessible signaling dimensions in both wired and wireless communication networks. A diversity of tools from linear algebra, algebraic geometry, diophantine approximation theory as well as coding and traditional Shannon theory continue to be the basis for an increasing variety of interference alignment schemes that include spatial alignment, lattice alignment, asymptotic alignment, asymmetric complex signal alignment, opportunistic alignment, ergodic alignment, aligned interference neutralization, blind alignment and retrospective alignment schemes. Applications include wireless interference networks, X networks, cellular networks, two-way communication networks, multicast and compound networks, multihop multiframe networks, tactical communication networks with secrecy and jamming issues, cooperative communication networks, cognitive radio networks, distributed data storage networks, index coding networks, and wired multiple unicast networks. This tutorial introduces the audience to the idea of interference alignment, traces its origins, reviews a variety of interference alignment schemes, summarizes the diverse settings where the idea of interference alignment is applicable and highlights the common principles that cut across these diverse applications.

Sunday 11 September 2011 • 14:00 – 17:30
Room: Pier 5, Hotel Convention Level 3rd Floor

T4: Mobile Radio Channel Sounding, Data Analysis and Radio Channel Modelling

Presenters: Robert Bultitude, Communications Research Centre, Canada,
Sana Salous, Durham University, U.K

This tutorial has the objective of outlining methods, measurement equipment, data analysis, and modelling procedures used by experts in the field to make mobile radio channel models available for use by systems engineers. The target audience is one composed of both students and practicing engineers considering the conduct of research in the field and/or systems engineers who use the results from such work and are seeking better knowledge of how information of importance to them is compiled.

The tutorial will begin with an overview by Dr. Bultitude of the basics, including the representation of radio channels as linear filters, the making of measurements to estimate radio channel impulse response functions, and applications for such results. This is to be followed by a short discussion of methods for triggering data collection and the advantages/disadvantages of each. Most of the time in the first half of the tutorial will be devoted to an outline of best practices for the analysis of channel sounding data, including: estimation and reporting of channel impulse response functions and static rms delay spreads; the selection of appropriate intervals for dynamic channel analysis; estimation of average power delay profiles and dynamic channel rms delay spreads; estimation of 1-D and 2-D frequency correlation functions and coherence bandwidths; and application of rms delay spread and coherence bandwidth results. A brief overview of more advanced research work in the area of double directional channel sounding and spatial channel modelling will then be given, with emphasis on directing participants to appropriate references for further reading. Attention will then be turned to narrowband channel modelling for a discussion of the extraction of narrowband results from channel impulse response estimates, removal of the influence of long term fading from measured time series, and the modelling of short term fading via cumulative distribution functions for envelope fading, including the estimation of Rician K ratios, and determining goodness of fit to hypothesised model fading distributions. The first part of the tutorial will end with some observations concerning the reporting of measurement and data analysis results, and some application examples concerning the modelling of relay channels, a topic of much current new interest.

In the second part of the tutorial, Professor Salous will discuss passive and active measurement techniques using both standard test and measurement equipment such as network analysers and spectrum analysers and custom designed radio channel sounders. The discussion of passive techniques will include observations on the assessment of radio coverage for possible placement of relay stations and spectral sensing for cognitive radio. Various aspects that need to be considered to design and implement both narrowband and wideband radio channel measurement equipment will be discussed in terms of the requirements of wideband measurements for both indoor and outdoor environments. This will include consideration of: the choice of waveform (for wideband applications in particular); processing gains associated with the use of wideband sounding signals; time and frequency synchronisation; stability and phase noise of reference sources; as well as time delay window and Doppler coverage. Resolution in both time delay and Doppler shift will be related to the radar ambiguity function; a number of techniques for the calibration of sounders from back to back tests and for the calibration of antennas with single and multiple elements in anechoic environments will be described and compared. Suitable sounder architectures for probing single band as well as multiple band radio links, with both single antenna and multi-antenna sounders for use during both active and passive measurements will be discussed. The tutorial will end with the presentation of examples showing measured data from the GSM and UMTS bands as well as from higher frequencies ranging up to 6 GHz, which were recorded in indoor environments such as shopping centres, TV studios and large office buildings, as well as outdoors in both rural/semi-rural and dense urban environments.

Sunday 11 September 2011 • 14:00 – 17:30
Room: Pier 9, Hotel Convention Level 3rd Floor

T5: Enabling Opportunistic Spectrum Access: White Space Databases and Spectrum Sensing

Presenters: Claudio da Silva, Virginia Tech, USA
Marina Petrova, RWTH Aachen, Germany

Opportunistic spectrum access (OSA) – also commonly referred to as Dynamic Spectrum Access – is a new concept that offers the potential for more efficient use of the radio spectrum and improved spectrum sharing. In OSA systems, users first identify idle or underutilized spectrum with the use of white space databases and/or spectrum sensing and then, following pre-defined rules, dynamically access the “best” frequency bands on an opportunistic and non-interfering basis. This tutorial gives an introduction to both enabling techniques supporting OSA, namely white space databases and spectrum sensing.

The first part of the tutorial is dedicated to OSA systems based on white space databases. In these systems, OSA devices access through the Internet a database containing data on protected services and obtain the channels that may be used at their locations. Such an approach was adopted in the U.S. for the opportunistic access of the TV bands. Spectrum sensing, a technique that according to the FCC “holds promise to further improvements in spectrum efficiency in the TV spectrum in the future and will be a vital tool for providing opportunistic access to other spectrum bands” is covered in the second part of the tutorial. We present in this tutorial the major efforts and trends in the development of these two techniques, as well as identify and discuss their main design and implementation challenges and open research problems. Relevant regulatory and standardization efforts will also be discussed.

9:00 – 12:30

Room: Harbour C, Hotel Convention Level 3rd Floor

WS1 – Special Session: Wireless Communication in Challenged Environments

Chair: Mehmet Can Vuran (University of Nebraska), USA

The recent advances in wireless communications and networking have motivated the use of these technologies in environments where no computer has gone before. More specifically, the ubiquitous data gathering, computation, and communication capabilities of tiny sensors, motes, microprocessors, and mobile communication devices have recently been exploited in places such as underground mines, tunnels, and soil; underwater environments such as oceans and rivers; the outer space; and locations affected by natural disasters. Wireless communication in these challenged environments is characterized by the direct impact of the physical world environment on the communication and networking performance. Accordingly, the traditional definitions of communication channel, connectivity, network topology, packet route, or message delivery may no longer hold true. To provide the required guarantees for applications in these environments, a fundamental understanding of the environmental impacts on communication as well as the physical layer effects on higher layer protocols is required. Moreover, cross-layer solutions that address the challenges in these environments by incorporating the interactions between the environment and communication performance are beneficial. Consequently, environment-aware solutions that adapt to the changes in their environment can be realized. This meeting is dedicated to recent advances in communication and networking in challenged environments. The goal is to bring people in different fields of research related to challenged environments to discuss challenges in applications, protocols, analysis models, evaluation methods, and experimental studies. Topics include: Network architectures, Analysis models, Channel models, Resiliency, reliability, and robustness, Communication protocols (transport, routing, MAC, error control, security), Cross-layer design and optimization, Localization solutions, Deployment scenarios and experiences; in Challenged Environments including: Underground (Mines, tunnels, and soil), Underwater, and Disaster areas.

14:00 – 17:30

Room: Harbour C, Hotel Convention Level 3rd Floor

WS2: ICT-ACROPOLIS Network of Excellence Workshop on “Cognitive Radio and Networking: Challenges and Solutions Ahead” (PIMRC-WS-CRN)

Chairs: Oliver Holland (King's College London, UK)

Sylvia Romaszko (RWTH Aachen University, Germany)

SESSION 1

Spectrum Sensing in Cognitive Femto Base Stations Using Welch Periodogram

Ilkka S. Harjula (VTT Technical Research Centre of Finland, Finland)

Atso Hekkala (VTT Technical Research Centre of Finland, Finland)

Statistical Models of Spectrum Opportunities for Cognitive Radio

Kamran Arshad (University of Surrey, United Kingdom)

Klaus Moessner (University of Surrey, United Kingdom)

Multiband Time-of-Arrival positioning technique for Cognitive radio systems

Robin Thomas (University of Pretoria, South Africa)

Bassem Zayen (Eurecom, France)

Raymond Knopp (Institut Eurecom, France)

Bodhaswar TJ Maharaj (University of Pretoria, South Africa)

Scenario-based Regulatory Requirements for Cognitive Radio

Matthias Barrie (IBBT-SMIT, Vrije Universiteit Brussel, Belgium)

Simon Delaere (IBBT-SMIT, Vrije Universiteit Brussel, Belgium)

Pieter Ballon (Vrije Universiteit Brussel, Belgium)

Optimal Resource Allocation in Multi-Relay Cognitive Networks Using Dual Decomposition

Musbah Shaat (Centre Tecnologic de Telecomunicacions de Catalunya (CTTC, Spain)

Fauzi Bader (CTTC & Centre Tecnologic de Telecomunicacions de Catalunya, Spain)

SESSION 2

High-Level Scenarios for the Future of Cognitive Radio Business

Arturas Medeisis (Vilnius Gediminas Technical University, Lithuania)

Simon Delaere (IBBT-SMIT, Vrije Universiteit Brussel, Belgium)

Practical Scenarios and Opportunities for Future Cognitive Radio Systems A Panel Discussion

9:00 – 17:30

Room: Harbour B, Hotel Convention Level 3rd Floor

WS3: W-Green: The “Key” to Next Generation of Mobile Radio Access and Networks Technologies

Chairs: Laurent Hérault (CEA-Leti)

Rahim Tafazolli (University of Surrey, UK)

Co-Chair: Merouane Debbah

(Supelec, Alcatel-Lucent Chair on Flexible Radio)

TPC Co-Chairs: Matti Latva-aho (University of Oulu, Finland)

Luis M. Correia (Technical University of Lisbon, Portugal)

Dietrich Zeller (Alcatel-Lucent, Germany)

Stefan Kaiser (DOCOMO Euro-Labs, Germany)

Low Power Opportunities for Handsets

Per Ljung (Nokia Research, USA)

Title to be Announced

Ian Opperman (CSIRO, Australia)

11:00 – 12:30

Workshop 3-2: W-Green 2

Opportunities for Energy Savings in Mobile Devices

Per Ljung (Nokia Research, USA)

Energy-Aware Adaptive Sectorisation in LTE Systems

Yinan Qi (University of Surrey, United Kingdom)

Muhammad Ali Imran (University of Surrey, United Kingdom)

Rahim Tafazolli (University of Surrey, United Kingdom)

Trade-off between Energy Efficiency and Spectral Efficiency in the Uplink of a Linear Cellular System with Uniformly Distributed User Terminals

Oluwakayode Onireti (University of Surrey, United Kingdom)

Fabien Hélot (University of Surrey, United Kingdom)

Muhammad Ali Imran (University of Surrey, United Kingdom)

9:00 – 10:30

Workshop 3-1: Invited Speaker Session

Energy Efficient Wireless Communication: Impact of Energy Harvesting and Processing Energy

Elza Erkip (University of New-York, USA)

Energy Efficient Networks -Reducing Cost and Carbon Footprint

Magnus Olsson (Ericsson Research, Sweden)

14:00 – 15:30

Workshop 3-3: W-Green 3:

Power Saving in Mobile Networks by Modifying Base Station Sectorization

Laszlo Hevizi (Hungary)

István Gódor (Ericsson Hungary, Hungary)

Energy Saving Potential of Integrated Hardware and Resource Management Solutions for Wireless Base Stations

Anton Ambrosy (Alcatel-Lucent, Bell Labs, Germany)

Oliver Blume (Alcatel-Lucent Bell Labs, Germany)

Henrik Klessig (Technische Universität Dresden, Germany)

Wiesława Wajda (Research, Germany)

Green Scheduling to Minimize Base station Transmit Power and UE Circuit Power Consumption

Rohit Gupta (LETI, France)

Emilio Calvanese Strinati (CEA-LETI, France)

Minimal Average Consumption Downlink Base Station Power Control Strategy

Hauke Holtkamp (The University of Edinburgh & DOCOMO Euro-Labs, Germany)

Gunther Auer (DOCOMO Euro-Labs, Germany)

Harald Haas (The University of Edinburgh, United Kingdom)

16:00 – 17:30

Workshop 3-4: W-Green 4:

A panel discussion on the issues related to Green Communications

9:00 – 17:30

Room: Harbour A, Hotel Convention Level 3rd Floor

WS4: The 4th International Workshop on Wireless Distributed Networks 2011 (WDN2011)

General Co-Chairs: Antti Tölli (University of Oulu, Finland)

Kenta Umebayashi (TUAT, Japan)

TPC Chair: Shinsuke Ibi (Osaka University, Japan)

Fundamental Study on Adaptive ACK Link Control for Downloading based on TCP Connection in Mobile Wireless Communication

Osamu Takyu (Shinshu University, Japan)

Yohsuke Seki (Tokyo University of Science, Japan)

Takeo Yamasaki (University of Tokyo, Japan)

Takeo Fujii (The University of Electro-Communications, Japan)

Yohtarō Umeda (Tokyo University of Science, Japan)

Xiaoqiu Wang (KDDI R&D Laboratories Inc., Japan)

Satoshi Konishi (KDDI R&D Laboratories Inc., Japan)

9:00 – 10:30

WS4-1 Sensing New Vision for the World of Wireless Communications Enabled with Cognition

Simon Haykin (McMaster University, Canada)

Cyclostationary Spectrum Sensing Under Four-Level Hypothesis for Spectrum Sharing

Kenta Umebayashi (Tokyo University of Agriculture and Technology, Japan)

Ji. Lehtomäki (University of Oulu, Finland)

Shinya Hatakeyama (Tokyo University of Agriculture and Technology, Japan)

Yasuo Suzuki (Tokyo University of Agriculture and Technology, Japan)

Spectrum Metrics for 2.4 GHz ISM Band Cognitive Radio Applications

Salim Hanna (Communications Research Center, Canada)

John Sydor (Communications Research Centre, Canada)

11:00 – 12:30

WS4-2: Network

Two-Level Channel Coding for Cooperative Wireless Networks Based on WiMAX LDPC codes

Robert H Morelos-Zaragoza (San Jose State University, USA)

Nigel D'Souza (San Jose State University, USA)

Cross-Layer Designed Adaptive Packet Length Control for Wireless Networks

Shintaro Mori (Kagawa University, Japan)

Koji Ishii (Kagawa University, Japan)

Shigeaki Ogoe (Kagawa University, Japan)

Distributed Self-Optimization for Efficient Reconfiguration in Overlapping Heterogenous Wireless Access Networks

Dian Fan (University of Western Ontario, Canada)

Xianbin Wang (University of Western Ontario, Canada)

Penghui Mi (University of Western Ontario, Canada)

14:00 – 15:30

WS4-3: Cooperation

Vision for Beyond 4G Broadband Radio Systems

Bernhard Raaf (Nokia Siemens Networks, Germany)

Wolfgang Zirwas (Nokia Siemens Networks GmbH&CoKG, Germany)

Karl-Josef Friederichs (Nokia Siemens Networks, Germany)

Esa Tirola (Nokia Siemens Networks, Finland)

Matti Laitila (Nokia Siemens Networks, Finland)

Patrick Marsch (Nokia Siemens Networks, Poland)

Risto Wichman (Aalto University, Finland)

A Study on Beam Tilt Angle of Base Station Antennas for Base Station Cooperation Systems

Doppo Sugimura (Tokyo Institute of Technology, Japan)

Maki Arai (Tokyo Institute of Technology, Japan)

Kei Sakaguchi (Tokyo Institute of Technology, Japan)

Kiyomichi Araki (Tokyo Institute of Technology, Japan)

Takayuki Sotoyama (Panasonic Mobile Communications Co., Ltd., Japan)

A Bit Interleaved Repetition Coded Base Station Cooperation for Downlink OFDM Signaling

Bing Yuan (Osaka University, Japan)

Shinsuke Ibi (Osaka University, Japan)

Seiichi Sampei (Osaka University, Japan)

16:00 – 17:30

WS4-4: Sensor Network

Cooperative Transmission Scheme with Inactive Node Reactivation Condition for Solar-Powered Wireless Sensor Networks

Kentaro Ota (Nagoya University, Japan)

Kentaro Kobayashi (Nagoya University, Japan)

Takaya Yamazato (Nagoya University, Japan)

Masaaki Katayama (Nagoya University, Japan)

Disjoint Trajectory in Wireless Sensor Networks with Two Mobile Sinks

Yukiya Kato (Yokohama National University, Japan)

Fumie Ono (Yokohama National University, Japan)

AID = Autonomous Infrastructure Deployment
CRSM = Cognitive Radio and Spectrum Management
ITN = Intelligent Transportation Networks
LPAN = Local and Personal Area Networks

SL = Security and Localization
WACC = Wide Area Cellular Communications
WNHC = Wireless Networks and Health Care
WWRF = Wireless World Research Forum

Monday, September 12 • 10:30 – 12:00
 Room: Pier 5, Hotel Convention Level 3rd Floor

AID-1: Femtocell Systems I

Chair: Antonio J. Rodrigues

Network Listening based Synchronization Techniques for Femtocell Systems

Parth Amin (Aalto University, Finland)
 Olav Tirkkonen (Aalto University, Finland)

Facilitating Active Hand-in using Out-of-Band Link at Femtocell

Soumya Das (Qualcomm & Rutgers University, USA)
 Peerapol Tinnakornsrisuphap (Qualcomm, Inc., USA)
 David Ott (Qualcomm Inc, USA)
 Samir S. Soliman (Qualcomm, Inc, USA)

Throughput-Based Incentives for Residential Femtocells

Rocco Di Taranto (University of Waterloo, Canada)
 Catherine Rosenberg (University of Waterloo, Canada)

Uplink Interference Management Techniques for 3G Femtocells

Yan Zhou (Qualcomm Inc, USA)
 Farhad Meshkati (QUALCOMM Inc., USA)
 Vansh Makh (Qualcomm, USA)
 Yeliz Tokgoz (Qualcomm, Inc., USA)
 Mehmet Yavuz (Qualcomm, USA)

Utilizing Femtocells for Peer-to-Peer File Sharing in Cellular Networks

Martin Macuha (Waseda University & Orange Labs, Tokyo, Japan)
 Yang-Yang Li (University of Toronto, Canada)
 Takuro Sato (Waseda University, Japan)

Monday, September 12 • 10:30 – 12:00
 Room: Pier 7, Hotel Convention Level 3rd Floor

AID-2: Traffic Management/Resource Allocation

Chair: Rath Vannithamby

A Semantic Agglomerative Traffic Management Framework for Ubiquitous Public Safety Networks

Nusrat Ahmed Surobhi (University of Sydney, Australia)
 Yaozhou Ma (The University of Sydney, Australia)
 Abbas Jamalipour (University of Sydney, Australia)

Resource Allocation Using Shapley Value in LTE

Mauricio Iturralde (Universite de Toulouse & ENSEEIHT-IRIT, France)
 Tara Ali Yahya (University Paris Sud 11, France)
 Anne Wei (Conservatoire National des Arts et Metiers, France)
 Andre-Luc Beylot (IRIT Toulouse, France)

Towards a Fair Non-convex Resource Allocation in Wireless Networks

Georgios Tychogiorgos (Imperial College, United Kingdom)
 Athanasios Gkelias (Imperial College London, United Kingdom)
 Kin K. Leung (Imperial College, United Kingdom)

Adaptive Traffic Load-Balancing for Green Cellular Networks

Lin Xiang (Huazhong University of Science and Technology, P.R. China)
 Francesco Pantisano (University of Bologna & Centre for Wireless Communications, Finland)
 Roberto Verdone (University of Bologna, Italy)
 Xiaohu Ge (Huazhong University of Science and Technology, P.R. China)
 Min Chen (Seoul National University, Korea)

Transmission Power Adaptation According to the Message Length for Wireless Sensor Networks

Denis Dessales (University of Poitiers, France)

Monday, September 12 • 10:30 – 12:00
 Room: Marine, Hotel 2nd Floor

CRSM-1: Wideband Spectrum Sensing

Chair: Sebastian Szyszkowicz

Optimized Bases Compressive Spectrum Sensing for Wideband Cognitive Radio

Mohammed Farrag (Egypt-Japan University of Science and Technology, Egypt)
 Mostafa El-Khamy (Egypt-Japan University of Science and Technology & Alexandria University, Faculty of Engineering, Egypt)
 Mohamed El-Sharkawy (Purdue School of Engineering and Technology, USA)

Optimal Wideband Spectrum Sensing Based on MTM with Adaptive Number of Sensors

Lihui Huang (Shanghai Normal University, P.R. China)
 Li Li (Shanghai Normal University, P.R. China)
 Jing Zhang (Shanghai Normal University, P.R. China)
 Jing Liu (Shanghai Normal University, P.R. China)

Novel Spectrum Edge Detection Techniques in Wideband Spectrum Sensing of Cognitive Radio

Yasin Miar (University of Ottawa, Canada)
 Claude D'Amours (University of Ottawa, Canada)

Reduced Complexity Multiband Multi-Sensor Spectrum Sensing

Che Kang Liang (Queen's University, Canada)
 Steven D Blostein (Queen's University, Canada)

Optimal Energy Tradeoff for Active Sensing in Cognitive Radio Networks

Thang Van Nguyen (Kyung Hee University, Korea)
 Hyundong Shin (Kyung Hee University, Korea)
 Tony Q. S. Quek (Institute for Infocomm Research, Singapore)
 Moe Win (Massachusetts Institute of Technology, USA)

Monday, September 12 • 10:30 – 12:00
 Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-2: Cooperative Spectrum Sensing

Chair: Alagan Anpalagan

A Weighted Fusion Scheme for Cooperative Spectrum Sensing based on Past Decisions

Lamiaa R. Khalid (Ryerson University, Canada)
 Alagan Anpalagan (Ryerson University, Canada)

Convex Sensing-Reporting Optimization for Cooperative Spectrum Sensing

Adam J. G. Noel (University of British Columbia, Canada)
 Robert Schober (University of British Columbia, Canada)

Performance Limitations for Cooperative Spectrum Sensing with Reporting Channel Errors

Sachin Chaudhari (Aalto University School of Electrical Engineering, Finland)
 Jarmo Lunden (Aalto University, Finland)
 Visa Koivunen (HUT, Finland)

A Low Complexity Multi-Threshold Centralized Detection Strategy for Cooperative Spectrum Sensing

Babak Abbasi Bastami (University of Nevada, Las Vegas, USA)
 Ebrahim Saberinia (University of Nevada, Las Vegas, USA)

Collaborative Channel Search in Cognitive Radio Networks

Siavash Fazeli Dehkordy (University of Toronto, Canada)
 Konstantinos N Plataniotis (University of Toronto, Canada)
 Subbarayan Pasupathy (University of Toronto, Canada)

Monday, September 12 • 10:30 – 12:00
Room: Pier 9, Hotel Convention Level 3rd Floor
LPAN-1: Physical Layer Design – 1
Chair: Xianbin Wang

Throughput Sensitivity to Antenna Pattern and Orientation in 802.11n Networks

Di Kong (University of Bristol, United Kingdom)
Evangelos Mellios (University of Bristol, United Kingdom)
David Halls (University of Bristol, United Kingdom)
Andrew Nix (University of Bristol, United Kingdom)
Geoffrey Hilton (University of Bristol, United Kingdom)

Performance of Energy Detection in NLOS Frequency-selective Fading Channels

Martin Bober (TU Dresden, Germany)
Rainer Moorfeld (Dresden University of Technology, Germany)
Eduard Jorswieck (Dresden University of Technology, Germany)

Time and Frequency Synchronisation in Optical Wireless OFDM Networks

Birendra Ghimire (Jacobs University Bremen, Germany)
Irina Stefan (Jacobs University, Germany)
Hany Elgala (Jacobs University Bremen, Germany)
Harald Haas (The University of Edinburgh, United Kingdom)

Indoor-to-Outdoor Path-Loss Models Femtocell Predictions

Yoann Corre (SIRADEL, France)
Julien Stephan (SIRADEL, France)
Yves Lostanlen (SIRADEL & University of Toronto, Canada)

Blind Estimation and Mitigation of Nonlinear Channels

Jan Dohl (Technische Universität Dresden, Germany)
Gerhard Fettweis (Technische Universität Dresden, Germany)

Monday, September 12 • 10:30 – 12:00
Room: Regatta, Hotel 2nd Floor

LPAN-2: Medium Access Control - 1
Chair: Mehmet Vuran

Improving Throughput of Wireless LANs with Transmit Power Control and Slotted Channel Access

Suhua Tang (ATR Adaptive Communications Research Laboratories, Japan)
Akio Hasegawa (ATR Adaptive Communications Research Lab., Japan)
Riichiro Nagareda (ATR, Japan)
Akito Kitaura (ATR Adaptive Communications Research Laboratories, Japan)
Tatsuo Shibata (ATR Adaptive Communications Research Laboratories, Japan)
Sadao Obana (Advanced Telecommunication Research Institute International, Japan)

Inter-cell Interference Management in OFDMA TDD Downlink Using Sounding/Silencing Protocol

Michal Cierny (Aalto University, Finland)
Cassio Barboza Ribeiro (Nokia Research Center, Finland)
Risto Wichman (Aalto University, Finland)
Olav Tirkkonen (Aalto University, Finland)

Channel-aware ALOHA with SINR Capture: When Is the Knowledge of Channel Not Helpful?

Fu-Te Hsu (National Taiwan University, Taiwan)
Hsuan-Jung Su (National Taiwan University, Taiwan)

IEEE 802.11ac: Enhancements for Very High Throughput WLANs

Eng Hwee Ong (Nokia Research Center, Finland)
Jarkko Knecht (Nokia Research Center, Finland)
Olli Alanen (Magister Solutions Ltd., Finland)
Zheng Chang (University of Jyväskylä, Finland)
Toni Huovinen (Tampere University of Technology, Finland)
Timo Nihtila (Magister Solutions Ltd., Finland)

Asynchronous Receiver-Initiated MAC Protocol with the Stair-Like Sleep in Wireless Sensor Networks

Takahiro Wada (Keio University, Japan)
I-Te Lin (Keio University, Japan)
Iwao Sasase (Keio University, Japan)

Monday, September 12 • 10:30 – 12:00
Room: Pier 4, Hotel Convention Level 3rd Floor
SL-1: Wireless Communications Security
Chair: Zhen Huang

Preemption, Fairness, and Security Dynamics in Heterogeneous DSA Environments

Shabnam Sodagari (Virginia Tech, USA)
T. Charles Clancy (Virginia Tech, USA)

Catch the Jammer in Wireless Sensor Network

Sun Yanqiang (National University of Defense Technology, P.R. China)
Refik Molva (Insitut Eurecom, France) Melek Onen (EURECOM, France)
Xiaodong Wang (National University of Defence Technology, P.R. China)
XingMing Zhou (School of Computer, National University of Defense Technology, P.R. China)

Secure Hybrid Digital-Analog Wyner-Ziv Coding

Ghadamali Bagherikaram (University of Toronto & University of Waterloo, Canada) Konstantinos N Plataniotis (University of Toronto, Canada)

On Optimal Artificial-Noise Assisted Secure Beamforming for the Fading Eavesdropper Channel

Szu-Hsiang Lai (National Taiwan University, Taiwan)
Pin-Hsun Lin (National Taiwan University, Taiwan)
Shih-Chun Lin (National Taiwan University, Taiwan)
Hsuan-Jung Su (National Taiwan University, Taiwan)

Eavesdropping on DS-CDMA Signal

Ming Li (State University of New York at Buffalo, USA)

Monday, September 12 • 10:30 – 12:00
Room: Harbour A, Hotel Convention Level 3rd Floor
WACC-01: Cooperative Communications - I
Chair: Shahram Shahbazpanahi

Improving CoMP Cluster Feasibility by Dynamic Serving Base Station Reassignment

Thorsten Biermann (DOCOMO Euro-Labs, Germany)
Luca Scalia (DOCOMO Euro-Labs & University of Palermo, Germany)
Changsoon Choi (DOCOMO Communications Laboratories Europe, Germany)
Holger Karl (University of Paderborn, Germany)
Wolfgang Kellerer (DOCOMO Communications Laboratories Europe, Germany)

Dynamic Cell Clustering Design for Realistic Coordinated Multipoint Downlink Transmission

Huan Sun (Alcatel-Lucent Shanghai Bell Co., Ltd., P.R. China)
Xiaobo Zhang (Alcatel-Lucent Research and Innovation, P.R. China)
Wei Fang (Alcatel-Lucent Shanghai Bell, P.R. China)

Coordinated Multipoint Multiuser-MIMO Transmissions over Backhaul-Constrained Mobile Access Networks

Changsoon Choi (DOCOMO Communications Laboratories Europe, Germany)
Luca Scalia (DOCOMO Euro-Labs & University of Palermo, Germany)
Thorsten Biermann (DOCOMO Euro-Labs, Germany)
Shinji Mizuta (DOCOMO Euro-Labs, Germany)

Decentralized Beam Coordination via Sum Rate Maximization in TDD Multi-cell MIMO Systems

Petri Komulainen (University of Oulu, Finland)
Antti Tolli (University of Oulu, Finland)
Markku Juntti (University of Oulu, Finland)

Downlink Distributed Beamforming Through Relays with Imperfect CSI

Yi Zheng (Queen's University, Canada)
Steven D Blostein (Queen's University, Canada)

Monday, September 12 • 10:30 – 12:00
Room: Harbour B, Hotel Convention Level 3rd Floor
WACC-02: Radio Resource Management - I
Chair: Riku Jantti

Power Efficient Resource Allocation in Uplink SC-FDMA Systems

Ayaz Ahmad (Supelec, France) Mohamad Assaad (Supelec, France)

Joint BS Selection and Subcarrier Assignment for Multicell Heterogeneous OFDM Unicasting

Chunhui Liu (RWTH Aachen University, Germany)
Peng Wang (Institute for Theoretical Information Technology, RWTH Aachen University, Germany)
Anke Schmeink (RWTH Aachen University, Germany)
Rudolf Mathar (RWTH Aachen University, Germany)

Ecological Competition based Resource Control for Sustainable Heterogeneous Wireless Networks

Md. Farhad Hossain (The University of Sydney, Australia)
Kumudu S Munasinghe (University of Sydney, Australia)
Abbas Jamalipour (University of Sydney, Australia)

A Parallel Bit Removal Greedy Algorithm for Multiuser 4G OFDM-based Systems

Hernan X. Cordova (Free University of Brussels & Philips International, Belgium)
Leo P. Van Biesen (Free University of Brussels, Vrije Universiteit Brussel, Belgium)

RAT Selection for Multiple Calls in Heterogeneous Wireless Networks Using Modified TOPSIS Group Decision Making Technique

Olabisi Emmanuel Falowo (University of Cape Town, South Africa)
H Anthony Chan (Huawei Technologies, USA)

Monday, September 12 • 10:30 – 12:00

Room: Harbour C, Hotel Convention Level 3rd Floor

WACC-03: OFDM - I

Chair: Lin Luo

A New Digital Predistorter Linearizer

Alexander Lozhkin (Fujitsu Laboratories Ltd., Japan)
Michiharu Nakamura (Fujitsu Laboratories, Ltd., Japan)

On Spectral Efficiency of Asynchronous OFDM/FBMC based Cellular Networks

Yahia Medjahdi (Cnam, France)
Michel Terre (CNAM, France)
Didier Le Ruyet (CNAM, France)
Daniel Roviras (Cnam, France)

Blind Frequency-Dependent IQ Imbalance Compensation Scheme Using CMA for OFDM System

Munehiro Matsui (NTT Communications Corporation, Japan)
Tadao Nakagawa (NTT Corporation, Japan)
Riichi Kudo (NTT Corporation, Japan)
Koichi Ishihara (NTT Corporation, Japan)
Masato Mizoguchi (Nippon Telegraph and Telephone Corporation, Japan)

On Spatial Data Multiplexing over Coded Filter-Bank Multicarrier with ML Detection

Rostom Zakaria (CNAM, France) Didier Le Ruyet (CNAM, France)

Multicarrier HF Communications with Amplify-and-Forward Relaying

Mohammad Reza Heidarpour (University of Waterloo, Canada)
Murat Uysal (Ozyegin University, Turkey)

Monday, September 12 • 10:30 – 12:00

Room: Pier 3, Hotel Convention Level 3rd Floor

WACC-04: Interference Management - I

Chair: Ahmed Saadani

Multi-objective Optimization for Inter-cell Interference Management in Advanced Multihop Cellular Networks

Beatriz Lorenzo (University of Oulu & Centre for Wireless Communications (CWC), Finland)
Savo Glisic (University of Oulu, Finland)

General Iterative Algorithm to Align Interference along Spatial Dimension

Yinggang Du (Huawei Technologies Co., Ltd, P.R. China)
Sheng Liu (Huawei Technologies Co. Ltd, P.R. China)

Iterative OFDM Receiver with Combined Interference Suppression and Cancellation

Kun Fang (DOCOMO Eurolab, Germany)
Gunther Auer (DOCOMO Euro-Labs, Germany)

Single-Antenna Interference Cancellation for Complex-Valued Signal Constellations with Applications to GSM/EDGE

Andreas M. Lehmann (University of Erlangen-Nurnberg, Germany)
Michael A. Ruder (University of Erlangen-Nurnberg, Germany)
Wolfgang Gerstacker (University of Erlangen-Nuernberg, Germany)
Robert Schober (University of British Columbia, Canada)

User Position Aware Multicell Beamforming for a Distributed Antenna System

Tuan Anh Le (King's College London, United Kingdom)
Mohammad Reza Nakhai (King's College London, United Kingdom)

Monday, September 12 • 10:30 – 12:00

Room: Pier 8, Hotel Convention Level 3rd Floor

WNHC-1: WNHC - Channel Modeling & PHY I

Chairs: Kamran Sayrafian and Kamya Yekeh Yazdandoost

Experimental Analysis of IEEE 802.15.4 for On/Off Body Communications

Navid Amini (UCLA, USA)
Wenyao Xu (University of California, Los Angeles, USA)
Zhinan Li (Peking University, P.R. China)
Ming-Chun Huang (UCLA, USA)
Majid Sarrafzadeh (UCLA, USA)

Raptor Codes in Wireless Body Area Networks

Jamshid Abouei (University of Toronto, Canada)
Siavash Fazeli Dehkordy (University of Toronto, Canada)
Konstantinos N Plataniotis (University of Toronto, Canada)
Subbarayan Pasupathy (University of Toronto, Canada)

Interference performance of IEEE 802.15.6 Impulse-Radio Ultra-Wideband Physical Layer

Igor Dotlic (National Institute of Information and Communications Technology, Japan)

Reconfigurable Subsampling Receiver Architecture For Wireless Body Area Networks

Duan Zhao (Delft University of Technology & Electronics Research Laboratory, The Netherlands)

Monday, September 12 • 14:30 - 16:00

Room: Pier 7, Hotel Convention Level 3rd Floor

AID-3: Autonomous Infrastructure Networks

Chair: Alberto Leon-Garcia

Autonomous Resource Allocation for Dense LTE Networks: A Multi Armed Bandit Formulation

Afef Feki (Bell Labs - Alcatel Lucent - France, France)
Veronique Capdevielle (Bell Labs - Alcatel Lucent - France, France)

Approaches to Enhancing Autonomous Power Control at Femto under Co-channel Deployment of Macrocell and Femtocell

Tao Yang (Alcatel-Lucent Bell Labs (China), P.R. China)
Lu Zhang (Alcatel-Lucent Bell Labs, P.R. China)

Interference Mitigation through Self-Organization in OFDMA Femtocells

Yu-Shan Liang (National Taiwan University, Taiwan)
Wei-Ho Chung (Academia Sinica, Taiwan)
Zhang Hongke (Beijing Jiaotong University, P.R. China)
Sy-Yen Kuo (National Taiwan University, Taiwan)

Self-Optimized Precoding and Power Control in Cellular Networks

Virgile Garcia (INRIA, CITI Lab, INSA Lyon, France)
Chung Shue Chen (Alcatel-Lucent Bell Labs, France)
Nikolai Lebedev (CPE Lyon / CITI Laboratory, University of Lyon, France)
Jean-Marie Gorce (INSA-Lyon, France)

A Generalized Methodology for Frequency Reuse in Autonomous Cellular Networks

Bijan Golkar (University of Toronto, Canada)
Elvino Silveira Sousa (University of Toronto, Canada)

Monday, September 12 • 14:30 - 16:00

Room: Marine, Hotel 2nd Floor

CRSM-3: Spectrum Sensing and Resource Allocation

Chair: Steven Blostein

Dynamic Resource Allocation for Cognitive OFDMA Networks based on "two witnesses rule" for Cooperative Spectrum Sensing

Rahma Bouraoui (Higher School of Communication SUP'COM & TECHTRA Reaserch Unit, Tunisia)
Hichem Besbes (Ecole Superieure de Communications de Tunis, Sup'Com, University of Carthage, TUNISIA, Tunisia)

Antenna Selection Based Spectrum Sensing for Cognitive Radio Networks

Stephen Lingfeng Wang (Toshiba Research Euro Ltd, United Kingdom)
Yue Wang (Toshiba Research Europe Limited, United Kingdom)
Justin Coon (Toshiba TRL, United Kingdom)
Angela Doufexi (University of Bristol, United Kingdom)

Cross-Layer Design of Multi-user Opportunistic Spectrum Access with Cooperative Sensing

Lu Ye (Zhejiang University, P.R. China)
Zhaoyang Zhang (Zhejiang University, P.R. China)
Huazi Zhang (Zhejiang University, P.R. China)
Xiran Ma (Zhejiang University, P.R. China)

Cooperative Learning for Reduced Complexity Cross-Layer Cognitive Radio

Andres Kwasinski (Rochester Institute of Technology, USA)
Wenbo Wang (Rochester Institute of Technology, USA)

History-aware Channel Search Schemes in Cognitive Radio Networks

Arash Azarfard (Ecole Polytechnique de Montr al, Canada)
Jean-Fran ois Frigon (Ecole Polytechnique de Montreal and GERAD, Canada)
Brunilde Sanso (Ecole Polytechnique de Montreal, Canada)

Monday, September 12 • 14:30 - 16:00

Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-4: Spectrum Access, Sharing and Allocation

Chair: Annamalai Annamalai

Identification of Spectrum Sharing Opportunities for a Finite Field Secondary Network through an Exact Outage Expression under Rayleigh Fading

Arshdeep S. Kahlon (Carleton University, Canada)
Sebastian S Szyszkowicz (Carleton University, Canada)
Shalini Periyalwar (Carleton University, Canada)
Halim Yanikomeroglu (Carleton University, Canada)

Interference-Aware Dynamic Spectrum Access in Cognitive Radio Network

Rajarshi Mahapatra (CEA-LETI, France)
Emilio Calvanese Strinati (CEA-LETI, France)

Predictive Opportunistic Spectrum Access using Learning based Hidden Markov Models

Hamed Ahmadi (National University of Singapore, Singapore)
Yong Huat Chew (Institute for Infocomm Research, Singapore)
Pak Kay Tang (Institute for Infocomm Research, A*STAR, Singapore)
Yogesh Nijssure (Newcastle University, United Kingdom)

A Stackelberg Game for Cooperative Transmission and Random Access in Cognitive Radio Networks

Xiaolei Hao (University of British Columbia, Canada)
Man Hon Cheung (University of British Columbia, Canada)
Vincent W.S. Wong (University of British Columbia, Canada)
Victor CM Leung (The University of British Columbia, Canada)

Spectrum Trading for Non-Identical Channel Allocation in Cognitive Radio Networks

Mohsen Nader Tehrani (University of Waterloo, Canada)
Murat Uysal (Ozyegin University, Turkey)

Monday, September 12 • 14:30 - 16:00

Room: Pier 3, Hotel Convention Level 3rd Floor

ITN-1: Networking

Chair: Azzedine Boukerche

Speed Adaptive Probabilistic Flooding for Vehicular Ad-Hoc Networks

Yiannos Mylonas (University of Cyprus, Cyprus)
Marios Lestas (University of Cyprus, Cyprus)
Andreas Pitsillides (University of Cyprus, Cyprus)
Petros Ioannou (University of Southern California, USA)

Handshaking vs. Instant Broadcast in VANET Safety Message Routing

Faisal Ahmad Khan (Georgia Institute of Technology, USA)
Yusun Chang (Southern Polytechnic State University & The Georgia Institute of Technology, USA)
Sung Jin Park (Georgia Institute of Technology, USA)
John A. Copeland (Georgia Institute of Technology, USA)

Local Density Estimation for Contention Window Adaptation in Vehicular Networks

Razvan Stanica (National Polytechnic Institute of Toulouse, France)
Emmanuel Chaput (Irit-Enseeiht, France)
Andre-Luc Beylot (IRIT Toulouse, France)

Characterizing Broadcast Packet Losses in IEEE 802.11p/WAVE Vehicular Networks

Claudia Campolo (University "Mediterranea" of Reggio Calabria, Italy)
Yevgeni Koucheryavy (Tampere University of Technology, Finland)
Antonella Molinaro (University "Mediterranea" of Reggio Calabria, Italy)
Alexey Vinel (Saint-Petersburg Institute for Informatics and Automation, Russia)

On Non-Saturation Regime in IEEE 802.11p based VANET with Mobile Nodes

Serkan Ozturk (Erciyes University, Turkey)
Jelena Mistic (Ryerson University, Canada)

Monday, September 12 • 14:30 - 16:00

Room: Pier 9, Hotel Convention Level 3rd Floor

LPAN-3: Hardware Design

Chair: Zoran Zvonar

Frequency-Domain Timing Synchronization for IEEE 802.11n Communications Systems

Ho Huat Peh (Institute for Infocomm Research & Imperial College London, Singapore)
Sumei Sun (Institute for Infocomm Research, Singapore)
Patrick Ho Wang Fung (Institute for Infocomm Research, Singapore)
Chin Keong Ho (Institute for Infocomm Research, A*STAR, Singapore)

Energy Detection based Blind Synchronization for Pulse Shape Modulated IR-UWB Systems

Rizwan Akbar (Universite de Bretagne Occidentale, France)
Emanuel Radoi (University of Brest & Lab-STICC UMR CNRS 3192, France)
Stephane Azou (Lab-STICC/UBO, France)

Wake-up Radio using IEEE 802.11 Frame Length Modulation for Radio-On-Demand Wireless LAN

Yoshihisa Kondo (ATR Adaptive Communications Research Lab., Japan)
Hiroyuki Yomo (Kansai University, Japan)
Suhua Tang (ATR Adaptive Communications Research Laboratories, Japan)
Masahito Iwai (NEC Communication Systems, Ltd., Japan)
Toshiyasu Tanaka (NEC Communication Systems, Ltd., Japan)
Hideo Tsutsui (ATR Adaptive Communications Research Laboratories, Japan)
Sadao Obana (Advanced Telecommunication Research Institute International, Japan)

A Low-Cost 2.45-GHz Frequency Synthesizer with Open-Loop Modulation for WPAN Applications

Lakhdar Zaid (IM2NP & University of Provence, France)
Jeremy Bouloc (IM2NP, France)
Albane Sangiovanni (IM2NP, France)
Fayrouz Haddad (IM2NP-University of Provence, France)
Wenceslas Rahajandraibe (IM2NP, France)
Vincent Cheynet de Beaupre (Freescale Semiconductor, France)
Romain Scali (Telecom SudParis, France)

OFDM-UWB MIMO Transceiver Implementation in Realistic Fading Channels

Mohamed AlJerjawi (University of Montreal, Canada)
Yansheng Xu (University of Montreal-Ecole Polytechnique, Canada)
Renato G. Bosisio (University of Montreal-Ecole Polytechnique, Canada)
Chahe Nerguizian (Ecole Polytechnique, Canada)

Monday, September 12 • 14:30 - 16:00

Room: Regatta, 2nd Floor

LPAN-4: Relaying and Cooperative Communication – 1

Chair: Soumaya Cherkaoui

Performance Analysis of a Cooperative MAC

David Tung Chong Wong (Institute for Infocomm Research, Singapore)
Anh Tuan Hoang (Institute for Infocomm Research, Singapore)
Ying-Chang Liang (Institute for Infocomm Research, Singapore)
Francois Chin (Institute for Infocomm Research, Singapore)

Cooperative Communication Design with Distributed Code Allocation in a Clustered Network

Xin He (University of Agder, Norway)
Frank Y. Li (University of Agder, Norway)

Investigations on the Effects of Co-channel Interference on Dual-Hop Transmission in Nakagami-m Fading

Salama Said Ikki (INRS, Canada)
Sonia Aissa (University of Quebec, INRS-EMT, Canada)

Cooperative MS-Grouping Schemes Based on Three Cost Metrics for Improving Battery Lifetime and Energy Efficiency

Hansung Leem (Korea Advanced Institute of Science and Technology, Korea)
Byoung Hoon Jung (Korea Advanced Institute of Science and Technology, Korea)
Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea)
A Low-Complexity Power Allocation for Cooperative Bit-Interleaved Coded Modulation Systems with Adaptive Decode-and-Forward Relaying
Tsang-Wei Yu (National Chiao Tung University, Taiwan)
Wern-Ho Sheen (Chaoyang University of Technology, Taiwan)
Chung-Hsuan Wang (National Chiao Tung University, Taiwan)

Monday, September 12 • 14:30 - 16:00

Room: Pier 4, Hotel Convention Level 3rd Floor

SL-2: TOA-Based Localization Systems

Chair: Mark Hedley

Fast and Accurate Tracking in Wireless Networks

Mark Hedley (CSIRO, Australia)
Ren Ping Liu (CSIRO, Australia)
Xun Yang (CSIRO ICT Center, Australia)

A New Perspective on the Impact of Diffraction in Proximity of Micro-Metals for Indoor Geolocation

Fardad Askarzadeh (Worcester Polytech Institute, USA)
Yunxing Ye (Worcester Polytechnic Institute, USA)
Kaveh Ghaboosi (University of Oulu, Finland)
Sergey Makarov (USA)
Kaveh Pahlavan (Worcester Polytechnic Institute, USA)

A Practical Indoor TOA Ranging Error Model for Localization Algorithm

Jie He (University of Science and Technology Beijing, P.R. China)
Qin Wang (University of Science and Technology Beijing, P.R. China)
QianXiong Zhang (University of Science and Technology Beijing, P.R. China)
Bingfeng Liu (University of Science and Technology Beijing, P.R. China)
Yanwei Yu (University of Science and Technology Beijing, P.R. China)

UWB Localization Algorithm to Improve Accuracy under NLOS Environment

Koji Enda (Yokohama National University, Japan)
Ryuji Kohno (Yokohama National University, Japan)

Concatenated Spectrum Multi-Band TOA Estimation

Mohsen Pourkhaatoun (Michigan Technological University, USA)
Seyed (Reza) Zekavat (Michigan Technological University, USA)

Monday, September 12 • 14:30 - 16:00

Room: Harbour A, Hotel Convention Level 3rd Floor

WACC-05: Channel Modeling, Estimation and Equalization - I

Chair: Ioannis Psaromiligkos

Prediction of Frequency Selective SIMO Channels

Nico Palleit (University of Rostock, Germany)
Tobias Weber (Uni Rostock, Germany)

Cramer-Rao Lower Bound for Channel Estimation in a MUROS/VAMOS Downlink Transmission

Michael A. Ruder (University of Erlangen-Nuernberg, Germany)
Robert Schober (University of British Columbia, Canada)
Wolfgang Gerstacker (University of Erlangen-Nuernberg, Germany)

Iterative Channel Estimation and Data Detection in Fast Fading Channels

Michael McGuire (University of Victoria, Canada)

Low Complexity Semi-Blind Channel Estimation Algorithm in Two-Way Relay Networks

Qiong Zhao (University of Sydney, Australia)
Zhendong Zhou (The University of Sydney, Australia)
Branka Vucetic (The University of Sydney, Australia)

Diversity Analysis of Optimal SC-FDE MIMO Systems and Comparison with OFDM Based Transmission

Gokhan Muzaffer Guvensen (Middle East Technical University, Turkey)
Ali Ozgur Yilmaz (Middle East Technical University, Turkey)

Monday, September 12 • 14:30 - 16:00

Room: Harbour B, Hotel Convention Level 3rd Floor

WACC-06: Relay Assisted Communications - I

Chair: Amr El-Keyi

Lattice-based Coding Scheme for MIMO Bi-directional Relaying with Three Nodes

Mylene Pischella (CNAM & Conservatoire National des Arts et Metiers, France)
Le Ruyet Didier (Electronics and Communication Laboratory, France)

Network Coding Noise Reduction via Relay Power Allocation in a Two-unicast Wireless System

Zahra Mobini (K N Toosi University of Technology, Iran)
Parastoo Sadeghi (The Australian National University, Australia)
Saadan Zokaei (University of Technology of Tehran, Iran)

Generalized Bidirectional Multi-pair Multi-antenna Wireless Network Coding

Tanumay Datta (Indian Institute of Science, India)
Ashok Kumar (Indian Institute of Science, India)
A. Chockalingam (Indian Institute of Science, India)

Out of Group Interference Aware Precoding for CoMP: A Maximum Eigenmode Based Approach

Yiwei Fang (Fujitsu Laboratories of Europe Ltd., United Kingdom)
John Thompson (University of Edinburgh, United Kingdom)

Precoder optimization for user fairness in shared relay channels with interference

Nicolas Gresset (Mitsubishi Electric Research Centre Europe, France)

	HARBOUR A Hotel Convention Level 3rd FI	HARBOUR B Hotel Convention Level 3rd FI	HARBOUR C Hotel Convention Level 3rd FI	
9:00 -10:30	WS4: The 4th International Workshop on Wireless Distributed Networks 2011 (WDN2011)	WS3: W-Green: The "Key" to Next Generation of Mobile Radio Access and Networks Technologies	WS1 - Wireless Communication in Challenged Environments	Tut
10:30 - 11:00				
11:00 - 12:30	WS4 - continued	WS3 - continued	WS1 - continued	
12:30 - 14:00				
14:00 - 15:30	WS4 - continued	WS3 - continued	WS2: ICT-ACROPOLIS Network of Excellence Workshop on "Cognitive Radio and Networking	T
15:30 - 16:00				
16:00 - 17:30	WS4 - continued	WS3 - continued	WS2 - continued	
18:30 - 20:30	Welcome Reception - Frontenac			

8:30 - 10:00	Conference Opening and Plenary Speakers: David Belar						
10:00 - 10:30							
Time	FRONTENAC Convention Center Lower Level	HARBOUR A Hotel Convention Level 3rd FI	HARBOUR B Hotel Convention Level 3rd FI	HARBOUR C Hotel Convention Level 3rd FI	PIER 2 Hotel Convention Level 3rd FI	PIER 3 Hotel Convention Level 3rd FI	
10:30 - 12:00	Panel 1: Femtocells & WiFi: Towards Cost efficient Ubiquitous Broadband	WACC-01: Cooperative Communications - I	WACC-02: Radio Resource Management - I	WACC-03: OFDM - I	WACC-04: Interference Management - I	SL-1: Wireless Communications Security	AID-
12:00 - 13:30	Lunch - Frontenac						
13:30 - 14:30		Keynote 1: P. R. Kumar		Keynote 2: Ted Rappaport			
14:30 - 16:00	Panel 2: Standardization, Technology, and Challenge For Body Area Network	WACC-05: Channel Modeling, Estimation and Equalization - I	WACC-06: Relay Assisted Communications - I	WACC-07: MIMO Techniques - I	ITN-1: Networking	SL-2: TOA-Based Localization Systems	W M Co Chall and
16:00 - 16:30							
16:30 - 17:30		WACC-08: Diversity Techniques - I	WACC-09: Cross Layer Design - I	WACC-10: Energy Efficient Design	WACC-11: Smart Antenna Systems	SL-3: RSS-Based Localization Methods	W M Co Chall and

8:30 - 10:00	Plenary Talk - Frontenac Speakers: Henri T						
10:00 - 10:30							
10:30 - 12:00	Panel 3: Which will be the Winning Technologies for the Networks of the Future?	WACC-12: Cooperative Communications - II	WACC-13: Radio Resource management - II	WACC-14: OFDM - II	WACC-15: Analysis, Simulation and Performance Evaluation - I	SL-4: Wireless Network Security	AID-
12:00 - 13:30	Lunch - Frontenac						
13:30 - 14:30		Keynote 3: Dipankar Raychaudhuri		Keynote 4: Sergio Verdu			
14:30 - 16:00	Panel 4: Heterogeneous Networks	WACC-16: Channel Modeling, Estimation and Equalization - II	WACC-17: Relay Assisted Communications - II	WACC-18: MIMO Techniques - II	ITN-2: Field Operational Tests, Applications, Intelligent Transportation Systems	SL-5: INS, Dead-Reckoning, and Vehicular Localization	W
16:00 - 16:30							
16:30 - 17:30		WACC-20: Diversity Techniques - II	WACC-21: Cross Layer Design - II	WACC-22: Multiple Access Techniques - I	ITN-3: ITS Networks and Networking Technologies	SL-6: Secrecy Capacity of Wireless Communications	W
18:30 - 21:30	Conference Banquet, Extra Cos						

9:00 - 10:00	Speakers: Jalal Mapar (H						
10:00 - 10:30							
10:30 - 12:00	Panel 5: How to make Mobile Cellular Communications even Greener?	WACC-24: Cooperative Communication - III	WACC-25: Radio Resource Management - III	WACC-26: Interference Management - II	WACC-27: Analysis, Simulation and Performance Evaluation - II	SL-7: Localization	W
12:00 - 13:30	Lunch - Frontenac						
13:30 - 15:00		WACC-29: Channel Modeling, Estimation and Equalization - III	Panel 6: Mobile Internet for the Emerging Economies	WACC-30: Relay Assisted Communications - III	WACC-31: MIMO Techniques - III	SL-8: Cooperative Localization Methods	W
15:00 - 15:30							
15:30 - 17:00		WACC-33: Multiple Access Techniques - II	WACC-34: Antenna and Propagation	WACC-35: Modulation and Coding - III	ITN-4: Radio Technologies, ITS Communications	WACC-36: Field Tests and Measurements	W

SEPTEMBER 11

PIER 4 Hotel Convention Level 3rd FI	PIER 5 Hotel Convention Level 3rd FI	PIER 9 Hotel Convention Level 3rd FI	
Tutorial 1: Interference Management in Femtocell Networks	Tutorial 3: Localization and Communication - Theory, Algorithms and Benefits of Localization in Wireless Networks		
Coffee Break			
Tutorial 1 - continued	Tutorial 3 - continued		
Lunch - on own			
Tutorial 2: Interference Alignment: A New Look at Signal Dimensions in Interference Networks	Tutorial 4: Mobile Radio Channel Sounding, Data Analysis and Radio Channel Modeling	Tutorial 5: Enabling Opportunistic Spectrum Access: White Space Databases and Spectrum Sensing	
Coffee Break			
Tutorial 2 - continued	Tutorial 4 - continued	Tutorial 5 - continued	

SEPTEMBER 12

7 Talk - Frontenac, Convention Center Lower Level Anger (AT&T) and Victor Bahl (Microsoft)						
Coffee Break						
PIER 4 Hotel Convention Level 3rd FI	PIER 5 Hotel Convention Level 3rd FI	PIER 7 Hotel Convention Level 3rd FI	PIER 8 Hotel Convention Level 3rd FI	PIER 9 Hotel Convention Level 3rd FI	REGATTA Hotel 2nd Level	MARINE Hotel 2nd Level
1: Femtocell Systems I	AID-2: Traffic Management/Resource Allocation	WNHC-1: WNHC – Channel Modeling & PHY I	LPAN-1: Physical Layer Design - 1	LPAN-2: Medium Access Control - 1	CRSM-1: Wideband Spectrum Sensing	CRSM-2: Cooperative Spectrum Sensing
ic, Convention Center Lower Level						

WRF Special Session: Machine to Machine Communications: Trends, Engines, Design Principles and Research Directions	AID-3: Autonomous Infrastructure Networks	WNHC-2: WNHC – Technology, Applications & Services I	LPAN-3: Hardware Design	LPAN-4: Relaying and Cooperative Communication - 1	CRSM-3: Spectrum Sensing and Resource Allocation	CRSM-4: Spectrum Access, Sharing and Allocation
Coffee Break						
WRF - Special Session: Machine to Machine Communications: Trends, Engines, Design Principles and Research Directions	AID-4: Energy Efficient Approaches	WNHC-3: WNHC - MAC & Cross Layer Design I	LPAN-5: Sensor Networks - 1	LPAN-6: Medium Access Control - 2	CRSM-5: Spectrum Access and Management	CRSM-6: Interference Management

SEPTEMBER 13

enac, Convention Center Lower Level irri (Nokia) and Wen Tong (Huawei)						
Coffee Break						
5: Femtocell Systems II	AID-6: Receiver Issues	WNHC-4: WNHC - Channel Modeling & PHY II	LPAN-7: MIMO Channel Modeling and Transmission Design	LPAN-8: Multihop Cooperative Communication	CRSM-7: Advanced Spectrum Sensing	CRSM-8: Radio Resource Allocation and Management
c. Convention Center Lower Level						

ACC-19: Modulation and Coding - I	AID-7: LTE Networks	WNHC-5: WNHC - Technology, Applications & Services II	LPAN-9: Emerging Applications	LPAN-10: Sensor Networks - 2	CRSM-9: Cognitive Radio: Applications and Operations	CRSM-10: Estimation and Detection Techniques
Coffee Break						
ACC-23: Routing and Scheduling - I	AID-8: MAC and Higher Layer	WNHC-6: WNHC - MAC & Cross Layer Design II	LPAN-11: Physical Layer Design - 2	LPAN-12: Medium Access Control - 3	CRSM-11: Signal Processing for Cognitive Radio	CRSM-12: Opportunistic Spectrum Access

SEPTEMBER 14

Plenary Talk (Homeland Security) and Riuji Kohno (NICT)						
Coffee Break						
ACC-28: Routing and Scheduling - II	AID-9: Femtocell Systems III	WNHC-7: WNHC - Wireless Sensor Networks & MANET	LPAN-13: Mobility and Resource Management	LPAN-14: Relaying and Cooperative Communication - 2	CRSM-13: Cognitive and Cooperative Radio Networks	CRSM-14: Performance Modeling and Analysis
Lunch, Convention Center Lower Level						
CC-32: Modulation and Coding - II	AID-10: Self-Configuration Techniques	WACC-38: Multiuser and Cooperation	LPAN-15: Multihop Routing	AID-11: Frequency Re-Use/Cellular System Techniques	CRSM-15: Cognitive Radio Performance	CRSM-16: Cognitive Radio Resource Management
Coffee Break						
CC-37: Wireless IP and Multimedia Services	AID-12: Cooperative Techniques				CRSM-17: Cognitive Radio and HetNet Performance	CRSM-18: Spectrum Sensing, Access and Management

Monday, September 12 • 14:30 - 16:00
Room: Harbour C, Hotel Convention Level 3rd Floor
WACC-07: MIMO Techniques - I
Chair: Chiao-En Chen

Space Time Interleaving Code in Frequency Selective Channels
Peng Sun (Beijing University of Posts and Telecommunications, P.R. China)
Daoben Li (Beijing University of posts and telecommunications, P.R. China)

An Efficient Feed-forward Method for Lattice Reduction MIMO Schemes
Mythri Hunukumbure (Fujitsu Labs of Europe Ltd, United Kingdom) Luciano
Sarperi (Fujitsu Laboratories of Europe Ltd, United Kingdom)
Sunil Vadgama (Fujitsu Laboratories of Europe Ltd, United Kingdom)

Optimizing Energy for Training vs. Data in Linearly Precoded Multiuser Sum-Rate Maximization
Adam J. Tenenbaum (University of Toronto, Canada)
Raviraj Adve (University of Toronto, Canada)

Enhanced Iterative Max-Sum-Rate Algorithm for Linear MU-MIMO Precoding
Chongning Na (DOCOMO Beijing Communications Laboratories Co., Ltd., P.R. China)
Xiaolin Hou (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China)
Atsushi Harada (DOCOMO Beijing Communications Laboratories Co., Ltd., P.R. China)

Joint Compensation of Multiple RF Impairments in MIMO STBC Systems
Jian Qi (King Abdullah University of Science and Technology, Saudi Arabia)
Sonia Aissa (University of Quebec, INRS-EMT, Canada)

Monday, September 12 • 14:30 - 16:00
Room: Pier 8, Hotel Convention Level 3rd Floor
WNHC-2: WNHC - Technology, Applications & Services I
Chair: William Scanlon

Localization Algorithm Performance in Ultra Low Power Active RFID Based Patient Tracking
William Cully (QUB, United Kingdom)
Simon Cotton (Queen's University, Belfast, United Kingdom)
William G. Scanlon (Queen's University Belfast & University of Twente, United Kingdom)
Jonathan McQuiston (ACT Wireless Limited, United Kingdom)

An Intelligent Multi-modal Affect Recognition System for Persistent and Non-invasive Personal Health Monitoring
Xiaoqing Liu (UtopiaCompression Corporation, USA)
Lei Zhang (UtopiaCompression Corp., USA)
Jacob Yadegar (UtopiaCompression Corporation, USA)

Markov Modeling of Energy Harvesting Body Sensor Networks
Joan Ventura (Technical University of Catalonia & Northeastern University, Spain)
Kaushik Chowdhury (Northeastern University, USA)

On the Accuracy of RF Aositioning in Multi-Capsule Endoscopy
Yunxing Ye (Worcester Polytechnic Institute, USA)
Umair I Khan (Worcester Polytechnic Institute & Center for Wireless Information Networks, USA)
Nayef A. Alsindi (Khalifa University of Science, Technology and Research - KUSTAR, UAE)
Ruijun Fu (Worcwster Polytechnic Institute, USA)
Kaveh Pahlavan (Worcester Polytechnic Institute, USA)

Monday, September 12 • 14:30 – 17:30
Room: Pier 5, Hotel Convention Level 3rd Floor
WWRF - Special Session: Machine to Machine Communications: Trends, Challenges, Design Principles and Research Directions
Organizer: On behalf of WWRF (www.wireless-world-research.org):
Angeliki Alexiou, – WWRF WG4 Chair, (University of Piraeus, Greece)

The Internet of Things concept envisions a revolution in the way we design and use communication networks based on the assumption that everyday objects, buildings and machines are equipped with sensors and are able to communicate with each other.

These Pervasive Systems – result of the integration between pervasive communications and ubiquitous computing- are expected to consist of a large number of computer-communication devices, often small in size and/or embedded in the environment. The elements of a Pervasive System interact with each other (machine to machine communications) and with mobile users, dynamically form communication networks and probe the environment in order to adapt and optimize the networks performance and the user experience and QoS.

The objective of this workshop is to discuss market and technology trends and challenges, explore design principles and identify promising research directions.

14:30 - 16:00
Invited talk: Challenges & Trends for Next Generation M2M”
Thierry Lestable (SAGEMCOM SAS, France)

A Joint Clustering and Routing Scheme to Maximize Link Performance in Cooperative MIMO Ad-hoc Networks
Bilal Zafar (Ilmenau University of Technology, Germany)
Soheyl Gharekhloo (TU Ilmenau, Germany)
Martin Haardt (Ilmenau University of Technology, Germany)

Energy Efficient AF Relaying under Error Performance Constraints with Application to M2M Networks
Georgina Elkheir (University of Piraeus, Greece)
Athanasios Lioumpas (University of Piraeus, Greece)
Angeliki Alexiou (University of Piraeus, Greece)

Optimizing Background-communication of Mobile Devices and Sensors to Drive End-user Services
Olaf Droegehorn (University of Applied Science Harz, Germany)

16:00 – 17:30
WWRF - Special Session - Continued

Improving Battery Life and Performance of Mobile Devices with Cyber Foraging
Janne Parkkila (Lappeenranta University of Technology, Finland)
Jari Porras (Lappeenranta University of Technology, Finland)

M2M communications technologies, applications and business models: challenges and limiting factors”, Panel discussion

Monday, September 12 • 16:30 - 17:30
Room: Pier 7, Hotel Convention Level 3rd Floor
AID-4: Energy Efficient Approaches
Chair: Sameh Sorour

Energy Efficient OFDMA: Trade-off between Computation and Transmission Energy

Feng Seng Chu (National Taiwan University, Taiwan)
Kwang-Cheng Chen (National Taiwan University, Taiwan)

Iterative Tracking the Minimum of Overall Energy Consumption in OFDMA Systems

Feng Seng Chu (National Taiwan University, Taiwan)
Kwang-Cheng Chen (National Taiwan University, Taiwan)

Energy Efficiency and Performance in Mobile Networks Deployments with Femtocells

Emilio Mino (Telefonica Investigacion y Desarrollo & Telefonica, Spain)

Monday, September 12 • 16:30 - 17:30
Room: Marine, 2nd Floor
CRSM-5: Spectrum Access and Management
Chair: Victor Leung

A Novel Spectrum Selection Strategy for Matching Multi-Service Secondary Traffic to Heterogeneous Primary Spectrum Opportunities

Faouzi Bouali (Universitat Politècnica de Catalunya, Spain)
Oriol Salent (Universitat Politècnica de Catalunya, Spain)
Jordi Perez-Romero (Universitat Politècnica de Catalunya (UPC), Spain)
Ramon Agusti (Universitat Politècnica de Catalunya, Spain)

An Access Technique for Secondary Network in Downlink Channels

Waqas Ahmed (Victoria University, Australia)
Jason Gao (Shanghai University of Electrical Power, P.R. China)
Shahryar Saleem (CTME, Australia)
Mike Faulkner (Victoria University, Australia)

Dynamic Spectrum Sharing for Two-Layer Cellular Networks

Rong-Terng Juang (Industrial Technology Research Institute, Taiwan)
Kar-Peo Yar (I2R, Singapore)
Pangan Ting (Tsing Hua University, Taiwan)
Hsin-Piao Lin (National Taipei University of Technology, Taiwan)
Ding-Bing Lin (National Taipei University of Technology, Taiwan)

Monday, September 12 • 16:30 - 17:30
Room: Pier 2, Hotel Convention Level 3rd Floor
CRSM-6: Interference Management
Chair: Lars K. Rasmussen

Aggregate Interference from Secondary Users with Heterogeneous Density

Miurel Tercero (KTH, Sweden)
Ki Won Sung (Royal Institute of Technology (KTH), Sweden)
Jens Zander (Royal Institute of Technology (KTH), Sweden)

Model for Computing Aggregate Interference from Secondary Cellular NetWork in Presence of Correlated Shadow Fading

Kalle Ruttik (Aalto University, Finland)
Konstantinos Koufos (TKK, Finland)
Riku J ntti (Aalto University School of Electrical Engineering, Finland)

Grid-based Channel Mapping in Cognitive Radio Ad hoc Networks

Sylvia Antonina Romaszko (RWTH Aachen University, Belgium)
Petri M h nen (RWTH Aachen University, Germany)

Monday, September 12 • 16:30 - 17:30
Room: Pier 9, Hotel Convention Level 3rd Floor
LPAN-5: Sensor Networks - 1
Chair: Shahram Shahbazpanahi

Nodes Placement for reducing Energy Consumption in Multimedia Transmissions

Pasquale Pace (University of Calabria, Italy)
Valeria Loscr (University of Calabria, Italy)
Enrico Natalizio (INRIA Lille - Nord Europe, France)
Tahiry Razafindralambo (INRIA Lille - Nord Europe, France)

Stochastic Coverage in Event-Driven Sensor Networks

Huimin She (Royal Institute of Technology (KTH), Sweden)
Zhonghai Lu (Royal Institute of Technology (KTH), Sweden)
Axel Jantsch (Royal Institute of Technology (KTH), Sweden)
Dian Zhou (Fudan University, P.R. China)
Li-Rong Zheng (Royal Institute of Technology (KTH), Sweden)

DA-MAC: Density Aware MAC for Dynamic Wireless Sensor Networks

Giorgio Corbellini (CEA, LETI, Minattec, France)
Emilio Calvanese Strinati (CEA-LETI, France)
Elyes Ben Hamida (Ineovation, France)
Andrzej Duda (Grenoble Institute of Technology, France)

Monday, September 12 • 16:30 - 17:30
Room: Regatta, 2nd Floor
LPAN-6: Medium Access Control - 2
Chair: Mohamad Assaad

Cross-Layer Throughput Optimization using Adaptive PHY/MAC Layer Techniques: A Unified Approach

Olusegun O. Odejide (Prairie View A&M University, USA)
Annamalai Annamalai (Prairie View A&M University, USA)

On Efficient Airtime-based Fair Link Scheduling in IEEE 802.11-based Wireless Networks

Karina Mabel Gomez (Create-Net & The University of Trento, Italy)
Roberto Riggio (Create-Net, Italy)
Tinku Rasheed (Create-Net Research, Italy)
Imrich Chlamtac (CREATE-NET, Italy)

Distributed Optimal TXOP Control for Throughput Requirements in IEEE 802.11e Wireless LAN

Ju Yong Lee (KAIST, Korea)
Ho Young Hwang (Korea Advanced Institute of Science and Technology, Korea)
Jitae Shin (Sungkyunkwan University, Korea)
Shahrokh Valaee (University of Toronto, Canada)

Monday, September 12 • 16:30 - 17:30
Room: Pier 4, Hotel Convention Level 3rd Floor
SL-3: RSS-Based Localization Methods
Chair: Amr El-Keyi

Improving the Accuracy of Connectivity-based Positioning for Mobile Sensor Networks

Stuart Maclean (York University, Canada)
Suprakash Datta (York University, Canada)

Fingerprinting-Based Radio Localization in Indoor Environments Using Multiple Wireless Technologies

Moises Rodrigues (Universidade Federal de Minas Gerais, Brazil)
Luiz Filipe Vieira (Universidade Federal de Minas Gerais, Brazil)
Mario Montenegro Campos (Universidade Federal de Minas Gerais, Brazil)

Impact of the Human Motion on the Variance of the Received Signal Strength of Wireless Links

Kareem El-Kafrawy (Nile University, Egypt)
Moustafa Youssef (Egypt-Japan University of Science and Technology Egypt)
Amr El-Keyi (Nile University, Egypt)

Monday, September 12 • 16:30 - 17:30
Room: Harbour A, Hotel Convention Level 3rd Floor
WACC-08: Diversity Techniques - I
Chair: Benoit Champagne

Maximum-Likelihood MIMO Detection Using Adaptive Hybrid Tree Search
Kuei-Chiang Lai (National Cheng Kung University, Taiwan)
Jiun-Jie Jia (Institute of Computer and Communication Engineering, Taiwan)
Li-Wei Lin (Institute of Computer and Communication Engineering, Taiwan)

Performance Analysis for Coded Cooperative Multiple-Relay in Distributed Turbo Channels
Chang Li (Network Management Center, China Mobile Hebei & Beijing University of Posts and Telecommunications, P.R. China)
Yafeng Wang (Beijing University of Posts and Telecommunications, P.R. China)
Wei Xiang (University of Southern Queensland, Australia)
Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)

Error-rate Performance Analysis of Opportunistic Regenerative Relaying
Kamel Tourki (Texas A&M University at Qatar, Qatar)
Hong-Chuan Yang (University of Victoria, Canada)
Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Monday, September 12 • 16:30 - 17:30
Room: Harbour B, Hotel Convention Level 3rd Floor
WACC-09: Cross Layer Design - I
Chair: Tallal Elshabrawy

Early-Drop based Hybrid ARQ in a Cross-layer Context
Sebastien Marcille (Telecom Paristech & Thales Communications, France)
Philippe Ciblat (Telecom ParisTech, France)
Christophe J. Le Martret (THALES Communications, France)

Cross-Layer Design of New HARQ Algorithms
Hossein Karkeh Abadi (Sharif University of Technology & Advanced Communications Research Institute, Iran)
Abbasali Makhdoumi Kakhaki (Sharif University of Technology & Advanced Communications Research Institute, Iran)
Farid Ashtiani (Sharif University of Technology, Iran)

Throughput-Optimal Cross-layer Resource Allocation in DS-CDMA Systems with Nakagami Multipath Fading
Arman Shojaeifard (King's College London, United Kingdom)
Mohammad Shikh-Bahaei (Kings college London, United Kingdom)

Monday, September 12 • 16:30 - 17:30
Room: Harbour C, Hotel Convention Level 3rd Floor
WACC-10: Energy Efficient Design
Chair: Rudolf Mathar

Energy Efficient Coded Cooperative Data Exchange for Mobile Users
Shahriar Etemadi Tajbakhsh (The Australian National University, Australia)
Parastoo Sadeghi (The Australian National University, Australia)

On the Energy Efficiency of Base Station Sleeping with Multicell Cooperative Transmission
Shengqian Han (Beihang University, P.R. China)
Chenyang Yang (Beihang University, P.R. China)
Gang Wang (NEC Labs, P.R. China)
Ming Lei (NEC Laboratories, P.R. China)

A Priority-aware Hybrid Multi-hop Energy Saving Strategy for Inter-eNB Scenario 2
Chongxian Zhong (Alcatel-Lucent Shanghai Bell Co., Ltd., P.R. China)
Tao Yang (Alcatel-Lucent Bell Labs (China), P.R. China)
Huan Sun (Alcatel-Lucent Shanghai Bell Co., Ltd., P.R. China)

Monday, September 12 • 16:30 - 17:30
Room: Pier 3, Hotel Convention Level 3rd Floor
WACC-11: Smart Antenna Systems
Chair: Steven Blostein

Power Allocation Algorithm for OFDM Distributed Antenna Systems
Wei-Peng Chen (Fujitsu Laboratories of America, USA)

SINR Balancing and Beamforming for the MISO Interference Channel
Francesco Negro (Eurecom, France)
Martina Cardone (Intel Mobile Communications, Canada)
Irfan Ghauri (Intel Mobile Communications, France)
Dirk Slock (Eurecom, France)

Single-Port MMSE Beamforming
Brian J Lawrence (McGill, Canada)
Ioannis Psaromiligkos (McGill University, Canada)

Monday, September 12 • 16:30 - 17:30
Room: Pier 8, Hotel Convention Level 3rd Floor
WNHC-3: WNHC - MAC & Cross Layer Design I
Chair: Shinsuke Hara

Superframe-Level Time-hopping System with Variable Contention Access Period for Wireless Body Area Communications
Jian (Andrew) Zhang (CSIRO ICT Centre, Australia)
Leif W Hanlen (National ICT Australia & Australian National University, Australia)
Andrew Y Wang (MIT, USA)
Xiaoqing Huang (CSIRO ICT Centre, Australia)

A Cyclic MAC Layer Synchronisation Approach for Time-critical Low-power Body Sensor Networks
Christoph Beck (Karlsruhe Institute of Technology (KIT), Germany)
Peter Hevesi (Karlsruhe Institute of Technology (KIT), Germany)
Jorg Nagel (Karlsruhe Institute of Technology, Germany)
Georg Bretthauer (Karlsruhe Institute of Technology, Germany)
Rudolf Guthoff (Universitat Rostock & Universitätsaugenklinik Rostock, Germany)

Action-based Scheduling Technique for 802.15.4/ZigBee Wireless Body Area Networks
Pooyan Abouzar (University of British Columbia, Canada)
Kaveh Shafiee (The University of British Columbia, Canada)
David G. Michelson (University of British Columbia, Canada)
Victor CM Leung (The University of British Columbia, Canada)

Tuesday, September 13 • 10:30 - 12:00
Room: Pier 5, Hotel Convention Level 3rd Floor
AID-5: Femtocell Systems II
Chair: Jacek Ilow

A Simple Equalization Technique to Minimize ICI in OFDMA-Based Femtocell Networks
Tharaperiya Gamage Amila Pradeep Kumara (Asian Institute of Technology & University of Oulu, Thailand)
Nandana Rajatheva (Asian Institute of Technology & Centre for Wireless Communications, University of Oulu, Thailand)

Downlink Interference Management Techniques for Residential Femtocells
Chirag Patel (Qualcomm, USA)
Varun Khaitan (Qualcomm Inc & IIT Kanpur, USA)
Sumeeth Nagaraja (Qualcomm, Inc., USA)
Farhad Meshkati (Qualcomm, Inc., USA)
Yeliz Tokgoz (Qualcomm, Inc., USA)
Mehmet Yavuz (Qualcomm, USA)

On the Analysis of Co-Tier Interference in Femtocells
Emmanouil Pateromichelakis (University of Surrey, United Kingdom)
Mehrdad Shariat (University of Surrey, United Kingdom)
Atta UI Quddus (University of Surrey, United Kingdom)
Rahim Tafazolli (University of Surrey, United Kingdom)

Coverage Extension with Hybrid-Access Femtocells

Sanam Sadr (University of Toronto, Canada)
Raviraj Adve (University of Toronto, Canada)

Adaptive Geolocation Based Interference Control for Hierarchical Cellular Network with Femtocells

Shweta Sagari (WINLAB, Rutgers University, USA)
Gautam Bhanage (Aruba Networks, USA)
Dipankar Raychaudhuri (Rutgers University, USA)

Tuesday, September 13 • 10:30 - 12:00

Room: Pier 7, Hotel Convention Level 3rd Floor

AID-6: Receiver Issues

Chair: Abbas Jamalipour

Interference Rejection Combining in Two-Tier Femtocell Networks

Youngmin Jeong (Kyung Hee University, Korea)
Hyundong Shin (Kyung Hee University, Korea)
Moe Win (Massachusetts Institute of Technology, USA)

Uplink Femto-Macro ICIC with SEMI-CENTRALIZED POWER CONTROL

Julien Guillet (Mitsubishi Electric Research Centre Europe, France)
Loic Brunel (Mitsubishi Electric RCE, France)
Nicolas Gresset (Mitsubishi Electric Research Centre Europe, France)

Periodic Variation Method for Blind Symbol Rate Estimation

Ahmet Guner (KTU, Turkey)
Ismail Kaya (Karadeniz Technical University, Turkey)

Channel Equalization in Wavelet Packet Modulation by Minimization of Peak Distortion

Anurag Bajpai (IRCTR, The Netherlands)
Madan Kumar Lakshmanan (Delft University of Technology, The Netherlands)
Homayoun Nikookar (Delft University of Technology, The Netherlands)

Successive Interference Cancellation for Two-group Resource Allocation

Mustafa Gurcan (Imperial College London, United Kingdom)
Hadhrani Ab Ghani (Imperial College London, United Kingdom)
Irina Ma (Imperial College London, United Kingdom)

Tuesday, September 13 • 10:30 - 12:00

Room: Marine, 2nd Floor

CRSM-7: Advanced Spectrum Sensing

Chair: Soon Oh

Adaptive Spectrum Sensing of Wireless Microphones with Noise Uncertainty

Mai Hassan (Cairo University, Egypt)
Omar Nasr (Cairo University, Egypt)

Primary-User Mobility Impact on Spectrum Sensing in Cognitive Radio Networks

Angela Sara Cacciapuoti (University of Naples Federico II, Italy)
Ian F. Akyildiz (Georgia Institute of Technology, USA)
Luigi Paura (Universit  di Napoli Federico II, Italy)

Analysis of Detection Performance in Spectrum Sensing Optimisation for Long Sensing Periods

Kevin Chang (Queensland University of Technology, Australia)
Bouchra Senadji (Queensland University of Technology, Australia)
Vinod Chandran (Queensland University of Technology, Australia)

On the Performance of Dimension Estimation-based Spectrum Sensing for Cognitive Radio

Bassem Zayen (Eurecom, France)

An Energy Detector for Spectrum Sensing in Impulsive Noise Environment

Tonu Trump (Tallinn University of Technology, Estonia)
Ivo Muursepp (Tallinn University of Technology, Estonia)

Tuesday, September 13 • 10:30 - 12:00

Room: Pier 2 Hotel Convention Level 3rd Floor

CRSM-8: Radio Resource Allocation and Management

Chair: Andres Kwasinski

Optimal Power Allocation in Multi-Hop Cognitive Radio Networks

Maksym A. Girnyk (Royal Institute of Technology, Sweden)
Ming Xiao (Royal Institute of Technology, Sweden)
Lars K. Rasmussen (KTH Royal Institute of Technology & University of South Australia, Sweden)

Optimal and Suboptimal Resource Allocation For Two-Hop OFDM-Based Multi-Relay Cognitive Networks

Musbah Shaat (Centre Tecnologic de Telecomunicacions de Catalunya (CTTC, Spain)
Faouzi Bader (CTTC & Centre Tecnologic de Telecomunicacions de Catalunya, Spain)

Power Allocation in Delay-QoS Constrained Multiband Cognitive Radios

Leila Musavian (INRS-EMT, Canada)
Sonia Aissa (University of Quebec, INRS-EMT, Canada)

TDD cognitive radio femtocell network (CRFN)

Reza Berangi (, Iran)
Shahryar Saleem (CTME, Australia)
Mike Faulkner (Victoria University, Australia)
Waqas Ahmed (Victoria University, Australia)

Distributed Cognitive Two-Way Relay Beamformer Designs under Perfect and Imperfect CSI

P. Ubaidulla (King Abdulla University of Science and Technology, Saudi Arabia)
Sonia A ssa (University of Quebec, INRS-EMT, Canada)

Tuesday, September 13 • 10:30 - 12:00

Room: Pier 9, Hotel Convention Level 3rd Floor

LPAN-7: MIMO Channel Modeling and Transmission Design

Chair: Yves Lostanlen

Extracting specular-diffuse clusters from MIMO channel measurements

Francois Quitin (Universite Libre de Bruxelles (ULB), Belgium)
Claude Oestges (Universite Catholique de Louvain, Belgium)
Francois Bellens (Universite Libre de Bruxelles (ULB), Belgium)
Stephane van Roy (Universite libre de Bruxelles & Universite Catholique de Louvain, Belgium)
Francois Horlin (Universite Libre de Bruxelles, Belgium)
Philippe De Doncker (ULB, Belgium)

Empirical Investigation of Multi-Link Separation for Indoor MIMO Channels

Claude Oestges (Universite Catholique de Louvain, Belgium)
Nicolai Czink (FTW Telecommunications Research Center Vienna, Austria)

A Performance Evaluation of 60 GHz MIMO Systems for IEEE 802.11ad WPANs

Xiaoyi Zhu (University of Bristol, United Kingdom)
Angela Doufexi (University of Bristol, United Kingdom)
Taskin Kocak (Bahcesehir University, Turkey)

Asymptotic Analysis of the Outage Probability for MIMO Ad-hoc Networks

Hengameh Keshavarz (University of Sistan & Baluchestan, Iran)
Javad Ahmadi-Shokouh (University of Sistan and Baluchestan, Iran)

Iterative Inter-carrier Interference Mitigation for Mobile MIMO-OFDM Systems

Yang Zhang (Xidian University, P.R. China)
Jiandong Li (Xidian University, P.R. China)
Lihua Pang (Xidian University, P.R. China)
Zhi Ding (UC Davis, USA)

Tuesday, September 13 • 10:30 - 12:00

Room: Regatta, 2nd Floor

LPAN-8: Multihop Cooperative Communication

Chair: Suhua Tang

ECAR: an Energy/Channel Aware Routing Protocol For Cooperative Wireless Sensor Networks

Ahmed Ben Nacef (INP Toulouse & France Telecom R&D Orange Labs, Tunisia)
Sidi-Mohammed Senouci (University of Bourgogne - ISAT Nevers, France)
Yacine Ghamri-Doudane (Universite Paris-Est (LIGM Lab) & ENSIE, France)
Andre-Luc Beylot (IRIT Toulouse, France)

Comparing the Energy Efficiency of Single-Hop, Multi-Hop and Incremental Decode-and-Forward in Multi-Relay Wireless Sensor Networks

Marcos Tomio Kakitani (UTFPR, Brazil)
Glauber Gomes de Oliveira Brante (Federal University of Technology - Parana (CPGEI/UTFPR), Brazil)
Richard Demo Souza (Federal University of Technology - Parana (UTFPR), Brazil)
Anelise Munaretto (UTFPR, Brazil)

Femto-Relays: A Power Efficient Coverage Extension Mechanism for Femtocells

Ponnu Jacob (Nanyang Technological University, Singapore)
A S Madhukumar (Nanyang Technological University, Singapore)

A Study on Outage Probability of Collaborative Multi-Hop Transmissions with Non-Uniformly Distributed Networks

Toshiki Kobayashi (Shizuoka University, Japan)
Koji Ishibashi (Harvard University & Shizuoka University, USA)
Tadahiro Wada (Shizuoka University, Japan)

An Experimental Study of Fractional Cooperation in Wireless Mesh Networks

Anthony Calce (York University, Canada)
Nariman Farsad (York University, Canada)
Andrew Eckford (York University, Canada)

Tuesday, September 13 • 10:30 - 12:00

Room: Pier 4, Hotel Convention Level 3rd Floor

SL-4: Wireless Network Security

Chair: Iwao Sasase

Location-based Anonymous Authentication for Vehicular Communications

Subir Biswas (University of Manitoba, Canada)
Jelena Masic (Ryerson University, Canada)

On the Resiliency of Sensor Networks Under the Pairwise Key Distribution Scheme

Osman Yagan (University of Maryland, USA)
Armand M. Makowski (University of Maryland, USA)

Efficient Solution to Decrease the Effect of DoS Attack against IP Address Ownership Proof in Mobile IPv6

Kentaroh Toyoda (Keio University, Japan)
Yuta Kamiguchi (Keio University, Japan)
Shinichiro Inoue (University of Keio, Japan)
Iwao Sasase (Keio University, Japan)

Limitations of Trust Management Schemes in VANET and Countermeasures

Zhen Huang (University of Ottawa, Canada)
Sushmita Ruj (University of Ottawa, Canada)
Marcos Cavenaghi (Unesp - Sao Paulo State University, Brazil)
Amiya Nayak (SITE, University of Ottawa, Canada)

Neural Network Based PHY-Layer Key Exchange for Wireless Communications

Dimitrios Karas (Aristotle University of Thessaloniki, Greece)
George K. Karagiannidis (Aristotle University of Thessaloniki, Greece) Robert Schober (University of British Columbia, Canada)

Tuesday, September 13 • 10:30 - 12:00

Room: Harbour A, Hotel Convention Level 3rd Floor

WACC-12: Cooperative Communications - II

Chair: Fu-Chun Zheng

Information Theoretic Performance of Cooperative Underwater Acoustic Communications

Suhail Al-Dharrab (University of Waterloo, Canada)
Murat Uysal (Ozyegin University, Turkey)

A Game Theoretic Approach for Content Distribution over Wireless Networks with Mobile-to-Mobile Cooperation

Lina Al-Kanj (American University of Beirut, Lebanon)
Walid Saad (University of Miami, USA)
Zaher Dawy (American University of Beirut, Lebanon)

A Novel Optimization Approach for Packet-wise Selective Relaying in CDMA Uplink Communications

Naoufel Debbabi (Sup'Com, Tunisia)
Ines Kammoun (ENIS, Tunisia)
Mohamed Siala (Sup'Com, Tunisia)

Cooperative Broadcast Channels with Hybrid ARQ

Ravi Narasimhan (Applied Micro Circuits Corporation, USA)

DMT Analysis and Optimization for Cooperative Multiuser OFDMA systems

Weiwei Yang (Institute of Communications Engineering, PLAUST, P.R. China)
Cai Yueming (Institute of Communications Engineering, PLAUST, P.R. China)
Yan Wang (Department of International Training, PLA University of Science and Technology, P.R. China)

Tuesday, September 13 • 10:30 - 12:00

Room: Harbour B, Hotel Convention Level 3rd Floor

WACC-13: Radio Resource Management - II

Chair: Mohamad Assaad

A Dynamic TDD Inter-Cell Interference Coordination scheme for Long Term Evolution Networks

Mohammed Al-Rawi (Aalto University, Finland)
Riku Jantti (Aalto University School of Electrical Engineering, Finland)

A Novel Distributed Inter-cell Interference Coordination Scheme based on Projected Subgradient and Network Flow Optimization

Akram Bin Sediq (Carleton University, Canada)
Rainer Schoenen (RWTH Aachen University, Faculty 6, Germany)
Halim Yanikomeroglu (Carleton University, Canada)
Ganini Senarath (Huawei Technologies Canada CO., LTD., Canada)
Zhijun Chao (Huawei Technologies, P.R. China)

Resource Allocation with Sum Throughput Improvement for Uplink Transmission in LTE Systems

Ching-Hsu Chang (National Chiao Tung University, Taiwan)
Hsi-Lu Chao (National Chiao Tung University, Taiwan)

Comparison of Different Network Densification Alternatives from the LTE Uplink Point of View

Kimmo Hiltunen (Ericsson Research, Oy L M Ericsson Ab, Finland)

Dynamic Fractional Power Control for LTE Uplink

Safa Essassi (Higher School of Communication of Tunis Sup'Com, Tunisia)
Mohamed Siala (Sup'Com, Tunisia)
Sofiane Cherif (Sup'Com, Tunisia)

Tuesday, September 13 • 10:30 - 12:00

Room: Harbour C, Hotel Convention Level 3rd Floor

WACC-14: OFDM - II

Chair: Fumihiko Hasegawa

A Low Complexity Receiver for T-transform based OFDM Systems

Imran Ali (University of South Australia, Australia)
Andre Pollok (University of South Australia, Australia)
Lin Luo (University of South Australia, Australia)
Linda M. Davis (University of South Australia, Australia)

Near-Optimal Linear Precoding for Multi-Point Cooperative Transmission with Frequency-Selective Channel

Qingjiang Shi (Research & Innovation Center, Alcatel-Lucent Shanghai Bell, P.R. China)
Jinsong Wu (Bell Labs, Shanghai, P.R. China)

A Novel Link Adaptive Transmission Scheme in Higher-Order MIMO Systems

Minxia Hu (Southeast University, P.R. China)
Shi Jin (Southeast University, P.R. China)
Jixi Gao (Southeast University, P.R. China)

Enhanced Alamouti Decoding Scheme for DVB-T2 Systems in SFN Channels

Aymen Omri (ENIT, Qatar) Ridha Hamila (Electrical Engineering, Qatar)
Ali Hazmi (Tampere University of Technology, Finland)
Ridha Bouallegue (National Engineering School of Sousse SUP'COM, 6th Tel Laboratory, Tunisia)
Arafat J. Al-Dweik (Khalifa University, UAE)

Sensitivity Analysis of Interleaved OFDMA System Uplink to Carrier Frequency Offset

Sayed Kazem Hashemizadeh (Isfahan University of Technology, Iran) Hamid Saeedi-Sourck (Isfahan University of Technology, Iran)
Mohammad Javad Omid (Isfahan University of Technology, Iran)

Tuesday, September 13 • 10:30 - 12:00

Room: Pier 3, Hotel Convention Level 3rd Floor

WACC-15: Analysis, Simulation and Performance Evaluation - I

Chair: Walaa Hamouda

Analytical Evaluation of LTE Uplink Performance in the IMT-Advanced Indoor Hotspot Scenario

Maciej Muhleisen (RWTH Aachen University, Faculty 6, Germany)
Bernhard H. Walke (RWTH Aachen University, Germany)

A Study on Design of Spatial Fading Emulator Based on Clarke's Model

Daisuke Matsuo (Tokyo Institute of Technology, Japan)
Maki Arai (Tokyo Institute of Technology, Japan)
Kei Sakaguchi (Tokyo Institute of Technology, Japan)
Kiyomichi Araki (Tokyo Institute of Technology, Japan)

A Handover Optimization Algorithm with Mobility Robustness for LTE systems

Koichiro Kitagawa (KDDI R&D Laboratories Inc., Japan)
Toshihiko Komine (KDDI R&D Labs., Inc., Japan)
Toshiaki Yamamoto (KDDI R&D Laboratories, Japan)
Satoshi Konishi (KDDI R&D Laboratories Inc., Japan)

Throughput Analysis of TDD LTE Random Access Channel

Ivan Vukovic (Nokia Siemens Networks, USA)
Igor Filipovich (Motorola, Inc., USA)

Hybrid Space-Time Diversity and Spatial-Multiplexing MIMO Cooperative Scheme for Wireless Communication Systems

Daniel R. Furtado (Federal University of Ceara, Brazil)
Francisco Marcio Caldas (Federal University of Ceara, Brazil)
Walter Cruz Freitas (Federal University of Ceara & Wireless Telecom Research Group, Brazil)

Tuesday, September 13 • 10:30 - 12:00

Room: Pier 8, Hotel Convention Level 3rd Floor

WNHC-4: WNHC - Channel Modeling & PHY II

Chair: Yu Ge

Interference Mitigation for Body Area Networks

Wen-Bin Yang (National Institute of Standards and Technology, USA)
Kamran Sayrafian (NIST, USA)

Performance and Transmission Power Bound Analysis for Optical Wireless based Mobile Healthcare Applications

Seyed Sina Torkestani (University of Limoges, France)
Nicolas Barbot (University of Limoges, France)
Stephanie Sahuguede (University of Limoges, France)
Anne Julien-Vergonjanne (University of Limoges, France)
Jean Pierre Cances (University of Limoges, France)

Dynamic Power Control in Wireless Body Area Networks Using Reinforcement Learning with Approximation

Ramtin Kazemi (Macquarie University, Australia)
Rein Vesilo (Macquarie University, Australia)
Eryk Dutkiewicz (Macquarie University, Australia)
Ren Ping Liu (CSIRO, Australia)

Doppler Spread Analysis of Human Motions for Body Area Network Applications

Ruijun Fu (Worcester Polytechnic Institute, USA)
Yunxing Ye (Worcester Polytechnic Institute, USA)
Ning Yang (Worcester Polytechnic Institute, USA)
Kaveh Pahlavan (Worcester Polytechnic Institute, USA)

A Statistical Analysis of the Influence of the Human Body on the Radiation Pattern of Wearable Antennas

Michal Mackowiak (Technical University of Lisbon, Portugal)
Carla Oliveira (Technical University of Lisbon, Instituto Superior Tecnico & Instituto de Telecomunicacoes, Portugal)
Carlos Lopes (Instituto Superior Tecnico, Portugal)
Luis M. Correia (IST - Technical University Lisbon, Portugal)

Tuesday, September 13 • 14:30 - 16:00

Room: Pier 7, Hotel Convention Level 3rd Floor

AID-7: LTE Networks

Chair: Sofiene Affes

Performance of LTE SON Uplink Load Balancing in Non-Regular Networks

Jussi Turkka (Tampere University of Technology, Finland)
Timo Nihtila (Magister Solutions Ltd., Finland)
Ingo Viering (Nomor Research GmbH, Germany)

Interference Coordination Based on Hybrid Resource Allocation for Overlaying LTE Macrocell and Femtocell

Bo Li (Beijing University of Posts and Telecommunications, P.R. China)
Yinghai Zhang (Beijing University of Posts and Telecommunications, P.R. China)
Gaofeng Cui (Beijing University of Posts and Telecommunications, P.R. China)
Weidong Wang (Beijing University of Posts and Telecommunications, P.R. China)
Jie Duan (Beijing University of Posts and Telecommunications, P.R. China)
Wenqing Chen (Beijing University of Posts and Telecommunications, P.R. China)

Design of Layered Radio Environment Maps for RAN Optimization in Heterogeneous LTE Systems

Tao Cai (Huawei Technologies Sweden AB, Sweden)
Jaap van de Beek (Huawei Technologies, Sweden)
Berna Sayrac (Orange Labs, France)
Sebastien Grimoud (France Telecom R&D & Telecom ParisTech, France)
Jad Nasreddine (RWTH Aachen University, Germany)
Janne Riihijarvi (RWTH Aachen University, Germany)
Petri Mahonen (RWTH Aachen University, Germany)

How Femtocells Impact the Capacity and The Energy Efficiency of LTE-Advanced Networks

Louai Saker (Orange Labs, France)
Salah Eddine Elayoubi (Orange Labs, France)
Tijani Chahed (Telecom SudParis, France)

E3F Based Assessment of Energy Efficiency of Relay Nodes in LTE-Advanced Networks

Roberto Fantini (Telecom Italia SpA, Italy)
Dario Sabella (Telecom Italia, Italy)
Marco Caretti (Telecom Italia, Italy)

Tuesday, September 13 • 14:30 - 16:00

Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-10: Estimation and Detection Techniques

Chair: Satyam Dwivedi

Multiband Joint Detection Framework for Complex Gaussian Signals in Cognitive Radios

Salma Zainab Farooq (National University of Sciences and Technology, Pakistan)

Abdul Ghafoor (National University of Sciences and Technology, Pakistan)

A Multiband MIMO Receiver with Ordered Successive Detection for Cognitive Radio

Tomoya Ohta (Kyoto University, Japan)

Satoshi Denno (Kyoto University, Japan)

Masahiro Morikura (Kyoto University, Japan)

Tatsuo Furuno (NTT DoCoMo, Inc., Japan)

Estimating Transmitter Activity Patterns: an Empirical Study in the Indoor Environment

Elena Meshkova (RWTH Aachen University, Germany)

Junaid Ansari (RWTH Aachen University, Germany)

Janne Riihijarvi (RWTH Aachen University, Germany)

Jad Nasreddine (RWTH Aachen University, Germany)

Petri Mahonen (RWTH Aachen University, Germany)

An Adaptive Energy Detection Technique Applied to Cognitive Radio Networks

Arash Vakili (McGill University, Canada)

Benoit Champagne (McGill University, Canada)

A Wideband Interference Power Estimator using a 1-bit Quantizer

Satyam Dwivedi (KTH Royal Institute of Technology, Sweden)

Alessio De Angelis (Royal Institute of Technology, KTH, Sweden)

Peter Handel (Royal Institute of Technology, Sweden)

Tuesday, September 13 • 14:30 - 16:00

Room: Marine, 2nd Floor

CRSM-9: Cognitive Radio: Applications and Operations

Chair: Faouzi Bader

A Short Feasibility Study of a Cognitive TV Black Space System

Yngve Selen (Ericsson AB, Sweden)

Robert Baldemair (Ericsson Research, Sweden)

Joachim Sachs (Ericsson Research, Germany)

Feasibility Evaluations for Secondary LTE Usage in 2.7-2.9GHz Radar Bands

Muhammad Imadur Rahman (Ericsson Research, Sweden)

Jorgen Karlsson (Ericsson Research, Sweden)

Cognitive radio implementation in ISM bands with Microsoft SORA

Jitin Bajaj (University of California, Los Angeles, USA)

Wooseong Kim (UCLA, USA)

Soon Young Oh (UtopiaCompression, USA)

Mario Gerla (University of California at Los Angeles, USA)

An Analysis of Radio Fingerprints Behavior in the Context of RSS-Based Location Fingerprinting Systems

Azin Arya (Ecole Telecom Paris-Tech, France)

Philippe Godlewski (Telecom ParisTech (ENST), France)

Reporting Effort for Cooperative Systems Applying Interference Floor Shaping

Wolfgang Mennerich (Nokia Siemens Networks GmbH&CoKG & TU-Berlin, Germany)

Wolfgang Zirwas (Nokia Siemens Networks GmbH&CoKG, Germany)

Tuesday, September 13 • 14:30 - 16:00

Room: Pier 3, Hotel Convention Level 3rd Floor

ITN-2: Field Operational Tests, Applications, Intelligent Transportation Systems

Chair: Jelena Misić

Experimental Analysis of Beamforming in High-Speed Railway Communication

Hung-Hsiang Wang (Industrial Technology Research Institute, Taiwan)

Hsin-An Hou (Industrial Technology Research Institute, Taiwan)

CVI: Connected Vehicle Infrastructure for ITS

Agop Koulakezian (University of Toronto, Canada)

Alberto Leon-Garcia (University of Toronto, Canada)

Efficient Secure Service Discovery Protocol for Intelligent Transportation Systems

Kaouther Abrougui (SITE, University of Ottawa, Canada)

Azzedine Boukerche (University of Ottawa, Canada)

Exploiting Trunked Radio to Support ITS Network Expansion and Redundancy

Ekasit Vorakitolan (The University of Oklahoma, USA)

Joseph P. Havlicek (University of Oklahoma, USA)

Mohammed Atiquzzaman (University of Oklahoma, USA)

Ronald Barnes (The University of Oklahoma, USA)

Sharing Vehicle and Infrastructure Intelligence for Assisted Intersection Safety

Somak Datta Gupta (UC Berkeley, USA)

Yaser P. Fallah (University of California, Berkeley, USA)

Steven Shladover (UC Berkeley, USA)

Tuesday, September 13 • 14:30 - 16:00

Room: Regatta, Hotel Convention Level 3rd Floor

LPAN-10: Sensor Networks - 2

Chair: Jussi Haapola

Energy-Efficient Beacon-less Protocol for WSN

Ibrahim Amadou (CITI / INRIA-SWING Lab INSA Lyon, France)

Guillaume Chelius (INRIA, France) Fabrice Valois (INSA Lyon, France)

Overflow of Fountain Codes in Multi-hop Wireless Sensor Networks

Anya Apavatjirut (INSA de Lyon, France)

Katia E Jaffres-Runser (INSA de Lyon, France)

Claire Goursaud (INSA-Lyon, France)

Cedric Lauradoux (INRIA & Insa Lyon, France)

An Efficient Event Detecting Protocol in Event-driven Wireless Sensor Networks

Lulu Liang (Beijing Jiaotong University, P.R. China)

Deyun Gao (Beijing Jiaotong University, P.R. China)

Zhang Hongke (Beijing Jiaotong University, P.R. China)

Oliver Yang (University of Ottawa, Canada)

Efficient and Reliable Breadcrumb Systems via Coordination among Multiple First Responders

Hengchang Liu (University of Virginia, USA)

Zhiheng Xie (University of Virginia, USA)

Jingyuan Li (University of Virginia, USA)

Kamin Whitehouse (University of Virginia, USA)

John Stankovic (University of Virginia, USA)

Shan Lin (University of Virginia, USA)

David Siu (Oceanit, USA)

Sensor Context Information for Energy-Efficient Optimization of Wireless Procedures

Daniel Corujo (Instituto de Telecomunicacoes Aveiro & Universidade de Aveiro, Portugal)

Marcelo Lebre (Instituto de Telecomunicacoes, Portugal)

Diogo Gomes (Universidade de Aveiro & Instituto de Telecomunicacoes, Portugal)

Rui L Aguiar (University of Aveiro & Instituto de Telecomunicacoes, Portugal)

Tuesday, September 13 • 14:30 - 16:00
Room: Pier 9, Hotel Convention Level 3rd Floor
LPAN-9: Emerging Applications
Chair: Eng Hwee Ong

Exploiting Radio Irregularity in the Internet of Things for Automated People Counting

Wei-Chuan Lin (Victoria University of Wellington, New Zealand)
Winston K.G. Seah (Victoria University of Wellington, New Zealand)
Wei Li (Victoria University of Wellington, New Zealand)

Enhancing the Capability and Energy Efficiency of Smartphones using WPAN

Rajesh Palit (University of Waterloo, Canada)
Ajit Singh (University of Waterloo, Canada)
Kshirasagar Naik (University of Waterloo, Canada)

i-LightHouse: a Visible Light Communication System for the Visually Impaired

Akinobu Funahashi (Nagoya University, Japan)
Kentaro Kobayashi (Nagoya University, Japan)
Hiraku Okada (Nagoya University, Japan)
Masaaki Katayama (Nagoya University, Japan)

Exploring Terabit Wireless Potential of Wavelength Division Multiplexing

Chia-Ying Shen (Graduate Institute of Communication Engineering, National Taiwan University, Taiwan)
Feng Seng Chu (National Taiwan University, Taiwan)
Kwang-Cheng Chen (National Taiwan University, Taiwan)

Web Services for Indoor Energy Management in a Smart Grid Environment

Adnan Khan (University of Ottawa, Canada)
Hussein Mouftah (University of Ottawa, Canada)

Tuesday, September 13 • 14:30 - 16:00
Room: Pier 4, Hotel Convention Level 3rd Floor
SL-5: INS, Dead-Reckoning, and Vehicular Localization
Chair: Seyed (Reza) Zekavat

Zigbee as a Means to Reduce the Number of Blind Spot Incidents of a Truck

Steven De Lausnay (Catholic University College Ghent & DraMCo, Belgium)
Thomas Standaert (Catholic University College Ghent, Belgium)
Nobby Stevens (Catholic University College Ghent, Belgium)
Wout Joseph (Ghent University, Belgium)
Leen Verloock (IBBT - Ghent University, Belgium)
Francis Goeminne (Ghent University, Belgium)
Luc Martens (Ghent University, Belgium)

Performance Analysis of a Novel Pedestrian Dead-Reckoning Method

Bogdan Pricope (Jacobs University Bremen, Germany)
Harald Haas (The University of Edinburgh, United Kingdom)

A Walking Velocity Update Technique for Pedestrian Dead-Reckoning Applications

Chi Chung Lo (National Chiao Tung University, Taiwan)
Chen-Pin Chiu (National Chiao Tung University, Taiwan)
Yu-Chee Tseng (National Chiao-Tung University, Taiwan)
Sheng-An Chang (Industrial Technology Research Institute, Taiwan)
Lun-Chia Kuo (ITRI, Taiwan)

Usability of Apple iPhones for Inertial Navigation Systems

Corina Schindhelm (University of Munich, Germany)
Florian Gschwandtner (University of Munich, Germany)
Michael Banholzer (University of Munich, Germany)

A Nearest Transmitter Classification Method for VLC Based Positioning System

Chinnapat Sertthin (Keio University, Japan)
Tomoaki Ohtsuki (Keio University, Japan)
Osamu Takyu (Shinshu University, Japan)
Takeo Fujii (The University of Electro-Communications, Japan)
Yohtarō Umeda (Tokyo University of Science, Japan)

Tuesday, September 13 • 14:30 - 16:00
Room: Harbour A, Hotel Convention Level 3rd Floor
WACC-16: Channel Modeling, Estimation and Equalization - II
Chair: Fu-Chun Zheng

Low-Complexity Frequency Offset and Phase Noise Estimation for Burst-Mode Digital Transmission

Jabran Bhatti (Ghent University, Belgium)
Nele Noels (Ghent University, Belgium)
Marc Moeneclaey (Ghent University, Belgium)

Second-Order Statistics of 2D Non Isotropic Mobile-to-Mobile Wireless Channels

Prasad Samarasinghe (Australian National University, Australia)
Thushara D. Abhayapala (Australian National University, Australia)
Tharaka Anuradha Lamehewa (DSTO, Australia)
Rodney Andrew Kennedy (The Australian National University, Australia)

Widely Linear vs. Conventional Subspace-Based Estimation of SIMO Flat-Fading Channels

Saeed Abdullah (McGill University, Canada)
Ioannis Psaromiligkos (McGill University, Canada)

Performance Evaluation of Downlink Beamforming over Non-Stationary Channels with Interference

Adrian Ispas (RWTH Aachen University, Germany)
Christian Schneider (Ilmenau University of Technology, Germany)
Gerd H. Ascheid (RWTH Aachen University, Germany)
Reiner S. Thoma (TU-Ilmenau, Germany)

Bayesian and Deterministic CRBs for Semi-Blind Channel Estimation in SIMO Single Carrier Cyclic Prefix Systems

Samir Omar (Eurecom, France)
Dirk Slock (Eurecom, France)
Oussama Bazzi (Lebanese University, Lebanon)

Tuesday, September 13 • 14:30 - 16:00
Room: Harbour B, Hotel Convention Level 3rd Floor
WACC-17: Relay Assisted Communications - II
Chair: Mylene Pischella

Energy-Efficient Techniques Allowing Intra-link Errors for Block-Fading Multiple Access Relaying

Pen-Shun Lu (University of Oulu, Finland)
Tadashi Matsumoto (CWC - Oulu, Finland)

Joint Power Allocation and Beamforming for Multiuser MIMO Two-way Relay Networks

Mohammad G. Khafagy (Nile University, Egypt)
Amr El-Keyi (Nile University, Egypt)
Tamer ElBatt (Nile University, Egypt)
Mohammed Nafie (Nile University & Cairo University, Egypt)

Energy Efficiency Using Cooperative Relaying

Tafzeel ur Rehman Ahsin (Royal Institute of Technology KTH, Sweden)
Slimane Ben Slimane (KTH, Sweden)

Joint Optimization of Power Allocation and Relay Position for Regenerative Relaying in the Presence of Co-Channel Interference

Salama Said Ikki (INRS, Canada)
Sonia Aissa (University of Quebec, INRS-EMT, Canada)

Power Allocation for Two-Way Amplify-Forward Relaying with Receive Channel Knowledge

Hossein Bagheri (University of Alberta, Canada)
Masoud Ardakani (University of Alberta, Canada)
Chintha Tellambura (University of Alberta, Canada)

Tuesday, September 13 • 14:30 - 16:00

Room: Harbour C, Hotel Convention Level 3rd Floor

WACC-18: MIMO Techniques - II

Chair: Raviraj Adve

A Computationally Efficient Multimode Antenna Selection Algorithm for MIMO V-BLAST Systems

Chiao-En Chen (National Chung-Cheng University, Taiwan)

Shin-Hua Huang (National Chung Cheng University, Taiwan)

Low Complexity Soft-Output Signal Detector for Spatial-Multiplexing MIMO System

Liang Liu (Lund University, Sweden)

Johan Lofgren (Lund University, Sweden)

Peter Nilsson (Lund University, Sweden)

Modified Partial Euclidean Distance for Iterative Tree-Search MIMO Detection

Till Wiegand (University of Bremen, Germany)

Nils Heidmann (University of Bremen, Germany)

Steffen Paul (University Bremen, Germany)

Scale Effects Oriented MIMO Detector

Rongrong Qian (Beijing University of Posts and Telecommunications, P.R. China)

Yuan Qi (Beijing University of Posts & Telecommunications, P.R. China)

Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)

Near-Capacity MIMO Subspace Detection

Yejian Chen (Alcatel-Lucent Deutschland AG, Germany)

Stephan ten Brink (Alcatel-Lucent, Bell Laboratories, Germany)

Tuesday, September 13 • 14:30 - 16:00

Room: Pier 5, Hotel Convention Level 3rd Floor

WACC-19: Modulation and Coding - I

Chair: B. Sundar Rajan

Proposal of Cross-Carrier Precoding for Carrier Aggregation Enhancement

Yuji Ikeda (KDDI R&D Laboratories Inc., Japan)

Issei Kanno (KDDI R&D Laboratories Inc., Japan)

Toru Kitayabu (KDDI R&D Laboratories Inc., Japan)

Hiroyasu Ishikawa (KDDI R&D Laboratories Inc., Japan)

Peak Power Reduction Techniques for Multi-Channel SC-OFDM

Fumihiro Hasegawa (Mitsubishi Electric Corporation, Japan)

Akihiro Okazaki (Mitsubishi Electric Corporation, Japan)

Hiroshi Kubo (Mitsubishi Electric Corporation, Japan)

Performance Degradation of Turbo Coded Physical Layer Network Coding on the Two-Way Relay Channel

Dong Fang (University of York, United Kingdom)

Alister G. Burr (University of York, United Kingdom)

Performance Analysis of Variable-Rate Adaptive Modulation for AF Opportunistic Relaying under Outdated CSI

Mohammad Torabi (Ecole Polytechnique de Montreal, Canada)

Jean-Francois Frigon (Ecole Polytechnique de Montreal and GERAD, Canada)

David Haccoun (Ecole Polytechnique de Montreal, Canada)

Cooperative Detection over Multiple Parallel Channels: a Principle Inspired by Nature

Rudolf Mathar (RWTH Aachen University, Germany)

Anke Schmeink (RWTH Aachen University, Germany)

Tuesday, September 13 • 14:30 - 16:00

Room: Pier 8, Hotel Convention Level 3rd Floor

WNHC-5: WNHC - Technology, Applications & Services II

Chair: Muzaffer Kanaan

Remote Elderly Assisted Living System- A preliminary research, development and evaluation

Mona Ghassemian (King's College London/ University of Greenwich, United Kingdom)

Shah Auckburaully (University of Greenwich, United Kingdom)

Maria Pretorius (University of Greenwich, United Kingdom)

David Jai-Persad (University of Greenwich, United Kingdom)

Classifier Fusion Framework using Genetic Algorithms

Tejaswi Tamminedi (UtopiaCompression Corporation, USA)

Priya Ganapathy (UtopiaCompression Corporation, USA)

Lei Zhang (UtopiaCompression Corp., USA)

Jacob Yadegar (UtopiaCompression Corporation, USA)

A State Classification Method Based on Space-Time Signal Processing Using SVM for Wireless Monitoring Systems

Jihoon Hong (Keio University, Japan)

Tomoaki Ohtsuki (Keio University, Japan)

Ranging Based on Maximum Likelihood Techniques for Ultra Wideband Medical Implants

Muzaffer Kanaan (Erciyes University, Turkey)

A Cooperative Medical Traffic Delivery Mechanism for Multi-hop Body Area Networks

Kaveh Ghaboosi (University of Oulu, Finland)

Kaveh Pahlavan (Worcester Polytechnic Institute, USA)

Carlos A Pomalaza-Raez (University of Oulu, Finland)

Tuesday, September 13 • 16:30 - 17:30

Room: Pier 7, Hotel Convention Level 3rd Floor

AID-8: MAC and Higher Layer

Chair: Nandana Rajatheva

Virtual Wireless Network Mapping: An Approach To Housing MVNOs On Wireless Meshes

Gautam Bhanage (Aruba Networks, USA)

Yanyong Zhang (Rutgers University, USA)

Dipankar Raychaudhuri (Rutgers University, USA)

Enhancement of Packetised-Preamble Based MAC Protocols: A Solution to Hidden-Node Problem in WSNs

Sabrieh Choochkar (King's College London, United Kingdom)

Reza Dilmaghani (King's College London, United Kingdom)

An Efficient Measurement Report Mechanism for Long Term Evolution Networks

Shih-Fan Chou (National Chiao Tung University, Taiwan)

Hsi-Lu Chao (National Chiao Tung University, Taiwan)

Chia-lung Liu (National Chung-Hsing University, Taiwan)

Tuesday, September 13 • 16:30 - 17:30

Room: Marine, 2nd Floor

CRSM-11: Signal Processing for Cognitive Radio

Chair: Jacek Ilow

GSM Downlink Spectrum Occupancy Modeling

Luis Mendes (Instituto de Telecomunicacoes, Portugal)

Luis C Goncalves (Telecommunications Institute, Portugal)

Atilio Gameiro (Telecommunications Institute/Aveiro University, Portugal)

Spectrum Sensing for Unknown Signals Based on Bartlett's Averaged Periodograms

Ebtihal Haider Gismalla (University of Manchester, United Kingdom)

Emad Alsusa (Manchester University, United Kingdom)

UEP Framework in Multiresolution Modulation for Robust Image Broadcasting

Hiten Datta (Dalhousie University, Canada)
Jacek Ilow (Dalhousie University, Canada)

Tuesday, September 13 • 16:30 - 17:30

Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-12: Opportunistic Spectrum Access

Chair: Ki Won Sung

On Discretizing the Exponential on-off Primary Radio Activities in Simulations

Zheng Wang (National University of Singapore & Institute for Infocomm Research, Singapore)
Yong Huat Chew (Institute for Infocomm Research, Singapore)
Chau Yuen (Singapore University of Technology and Design, Singapore)

Multi-rate Opportunistic Spectrum Access in Multi-hop Ad Hoc Networks

Ari Raptino H (Shizuoka University, Japan)
Masaki Bandai (Sophia University, Japan)
Takashi Watanabe (Shizuoka University, Japan)

Decentralized Coordinated Downlink Beamforming for Cognitive Radio Networks

Harri Pennanen (University of Oulu, Finland)
Antti Tolli (University of Oulu, Finland) Matti Latva-aho (UoOulu, Finland)

Tuesday, September 13 • 16:30 - 17:30

Room: Pier 3, Hotel Convention Level 3rd Floor

ITN-3: ITS Networks and Networking Technologies

Chair: Luis M. Correia

On the Optimal MAC Layer Capacity of Delay Tolerant Mobile Ad Hoc Networks with a Finite Number of Nodes

Spyros Vassilaras (Athens Information Technology, Greece)
Ioannis Christou (Athens Information Technology, Greece)

Using a Symmetric Game Based In Volunteer's Dilemma to Improve Vanets Multihop Broadcast Communication

Filipe Maciel Roberto (Universidade Estadual do Ceara, Brazil)
Joaquim Celestino Junior (State University of Ceara, Brazil)
Henning Schulzrinne (Columbia University, USA)

Opportunistic Trajectory-based Routing for V2V Communications

Huy Ngoc Dau (TELECOM ParisTech (Ex: ENST), France)
Houda Labiod (TELECOM ParisTech (ex: ENST), France)

Tuesday, September 13 • 16:30 - 17:30

Room: Pier 9, Hotel Convention Level 3rd Floor

LPAN-11: Physical Layer Design - 2

Chair: Annamalai Annamalai

Mutual-Information Based Rate-Adaptation for Multi-User TH-IR-UWB coded system

Gabriele Boccolini (Universidad de Valencia, Spain)
Charly Poulliat (University Cergy-Pontoise, France)

Computationally Efficient Implementation for Incremental Redundancy within Wireless Networks

Tallal Elshabrawy (The German University in Cairo, Egypt)
Mottaz Elsharkawy (German University in Cairo, Egypt)

A Space-Time Precoded Hybrid Beamforming Architecture for Broadband Transmissions in 60GHz Radio

Yu-Shiung Yin (National Chiao Tung University, Taiwan)
Lin-Kai Chiu (National Chiao Tung University, Taiwan)
Sau-Hsuan Wu (National Chiao Tung University, Taiwan)

Tuesday, September 13 • 16:30 - 17:30

Room: Regatta, 2nd Floor

LPAN-12: Medium Access Control - 3

Chair: Ben Liang

Efficient mm-Wave Beamforming Protocol for Group Environments

Jussi P Haapola (Centre for Wireless Communications, University of Oulu, Finland)
Shuzo Kato (Tohoku University, Japan)

Resource Allocation in Optical Wireless Networks

Birendra Ghimire (Jacobs University Bremen, Germany)
Harald Haas (The University of Edinburgh, United Kingdom)

Throughput of CSMA in eta-mu Fading Channels

Elvio Leonardo (State University of Maringa (UEM), Brazil)
Michel Daoud Yacoub (State University of Campinas, Brazil)

Tuesday, September 13 • 16:30 - 17:30

Room: Pier 4, Hotel Convention Level 3rd Floor

SL-6: Secrecy Capacity of Wireless Communications

Chair: Subir Biswas

On the Ergodic Secrecy Rate of Multiple-Antenna Wiretap Channels Using Artificial Noise and Finite-Rate Feedback

Liang Sun (Research and Innovation Center, Alcatel-Lucent Shanghai Bell, Shanghai, P.R. China)
Shi Jin (Southeast University, P.R. China)

Closed-form Approximations for Secrecy Capacity in Rayleigh-fading Multi-antenna Systems

Rongrong Qian (Beijing University of Posts and Telecommunications, P.R. China)
Yuan Qi (Beijing University of Posts & Telecommunications, P.R. China) Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)
Jun Yang (Beijing University of Posts and Telecommunications, P.R. China)

Increasing Secrecy Capacity via Joint Design of Cooperative Beamforming and Jamming

Xinrong Guan (Institute of Communications Engineering, PLAUST, P.R. China)
Cai Yueming (Institute of Communications Engineering, PLAUST, P.R. China)
Yan Wang (Department of International Training, PLA University of Science and Technology, P.R. China)
Weiwei Yang (Institute of Communications Engineering, PLAUST, P.R. China)

Tuesday, September 13 • 16:30 - 17:30

Room: Harbour A, Hotel Convention Level 3rd Floor

WACC-20: Diversity Techniques - II

Chair: Kuei-Chiang Lai

A Simple Optimal Solution for Relay Assignment in Cooperative Systems Based on the Max-min Criterion

Amir Minayi Jalil (University of Limoges, France)
Vahid Meghdadi (University of Limoges, France)
Ali Ghrayeb (Concordia University, Canada)
Jean Pierre Cances (University of Limoges, France)

Myopic Multi-Hop Transmission Strategies in Layered Wireless Networks

Maksym A. Girnyk (Royal Institute of Technology, Sweden)
Lars K. Rasmussen (KTH Royal Institute of Technology & University of South Australia, Sweden)

Outage Analysis of Hybrid-ARQ Protocols in Coherent Free-Space Optical Communications

Sahar Molla Aghajanzadeh (University of Waterloo, Canada)
Murat Uysal (Ozyegin University, Turkey)

Tuesday, September 13 • 16:30 - 17:30
Room: Harbour B, Hotel Convention Level 3rd Floor
WACC-21: Cross Layer Design II
Chair: Chintha Tellambura

Cross-Layer Dynamic Subcarrier Allocation in Multiuser OFDM System with MAC Layer Diverse QoS Constraints

Penghui Mi (University of Western Ontario, Canada)
Xianbin Wang (University of Western Ontario, Canada)

Four-Level UEP of H.264 Scalable Video Coding using Discrete Wavelet Transform

Andrew Morcos (German University in Cairo, Egypt)
Tallal Elshabrawy (German University in Cairo, Egypt)

Cross-layer Dynamic Route Selection in Wireless Multiuser Two-hop Networks

Kamal Rahimi Malekshan (University of Tehran, Iran)
Farshad Lahouti (University of Tehran, Iran)

Tuesday, September 13 • 16:30 - 17:30
Room: Harbour C, Hotel Convention Level 3rd Floor
WACC-22: Multiple Access Techniques - I
Chair: Witold Krzymien

Successive Interference Cancellation Techniques for LTE Downlink

Johan Axnas (Ericsson Research, Sweden)
Y.-P. Eric Wang (Ericsson Research, USA)
Matthias Kamuf (Ericsson Research, Sweden)
Niklas Andgart (Ericsson Research, Sweden)

Impact of Receiver Interference Cancellation Techniques on the Base Station Power Consumption in MIMO Systems with Inter-Cell Interference

Ivan Ku (Heriot Watt University, United Kingdom)
Chengxiang Wang (Heriot-Watt University, United Kingdom)
John Thompson (University of Edinburgh, United Kingdom)
Peter Grant (Edinburgh School of Engineering and Electronics, United Kingdom)

Tuesday, September 13 • 16:30 - 17:30
Room: Pier 5, Hotel Convention Level 3rd Floor
WACC-23: Routing and Scheduling - I
Chair: Zhaoyang Zhang

Towards Distributed and Dynamic Backpressure Routing for Wireless Mesh Networks

Jose Nunez-Martinez (Centre Tecnologic de Telecomunicacions de Catalunya, Spain)
Josep Mangués-Bafalluy (Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain)
Marc Portoles-Comeras (Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain)

Analysis of Deficit Round Robin Scheduling for Future Aeronautical Data Link

Serkan Ayaz (German Aerospace Center (DLR), Germany)
Felix Hoffmann (German Aerospace Center (DLR), Germany)
Reinhard German (Universitaet Erlangen-Nuernberg, Germany)
Falko Dressler (University of Innsbruck, Austria)

Efficient Scheduling for Relay-Aided Broadcasting with Random Network Codes

Lu Lu (Royal Institute of Technology, Sweden)
Ming Xiao (Royal Institute of Technology, Sweden)
Lars K. Rasmussen (KTH Royal Institute of Technology & University of South Australia, Sweden)
Mikael Skoglund (Royal Institute of Technology, Sweden)

Tuesday, September 13 • 16:30 - 17:30
Room: Pier 8, Hotel Convention Level 3rd Floor
WNHC-6: WNHC - MAC & Cross Layer Design II
Chair: Matti Latva-aho

A Power Efficient Pulsed MAC Protocol for Body Area Networks

David Layerle (Rochester Institute of Technology, USA)
Andres Kwasinski (Rochester Institute of Technology, USA)

Performance Benchmarking for Wireless Body Area Networks at 2.4 GHz

Yu Ge (Institute for Infocomm Research, Singapore)
Jeng Wai Kwan (Institute for Infocomm Research, Singapore)
Jaya Shankar Pathmasuntharam (Institute for Infocomm Research, Singapore)
Zhengye Di (Nanyang Technological University, Singapore)
Terence S.P. See (Institute for Infocomm Research, Singapore)
Wei Ni (Institute for Infocomm Research, Singapore)
Chee Wee Kim (Institute for Infocomm Research, Singapore)
Tat Meng Chiam (Institute for Infocomm Research, Singapore)
Maode Ma (Nanyang Technological University, Singapore)

A Cooperative Transmission Scheme for Real-Time Data Gathering in a Wireless Body Area Network

Shinsuke Hara (Osaka City University, Japan)
Daisuke Anzai (Osaka City University, Japan)
Kentaro Yanagihara (Oki Electric Industry Co., Ltd., Japan)
Kenichi Takizawa (NICT, Japan)
Kiyoshi Hamaguchi (NICT, Japan)

Wednesday, September 14 • 10:30 - 12:00
Room: Pier 7, Hotel Convention Level 3rd Floor

AID-9: Femtocell Systems III
Chair: Marcelo Alencar

Throughput and Fairness of Femtocell Users in OFDM Macrocell-Femtocell Networks

Poramate Tarasak (Institute for Infocomm Research, Singapore)
Tony Q. S. Quek (Institute for Infocomm Research, Singapore)

Optimization of Power Control Algorithm for Femtocells Based on Frame Utilization

Pavel Mach (Czech Technical University in Prague, Czech Republic)
Zdenek Becvar (Czech Technical University in Prague, Czech Republic)

Downlink Femto-Macro ICIC with Blind Long-Term Power Setting

Julien Guillet (Mitsubishi Electric Research Centre Europe, France)
Loic Brunel (Mitsubishi Electric RCE, France)
Nicolas Gresset (Mitsubishi Electric Research Centre Europe, France)

User-vote Assisted Self-organizing Load Balancing for OFDMA Cellular Systems

Lexi Xu (Queen Mary, University of London, United Kingdom)
Yue Chen (Queen Mary, University of London, United Kingdom)
John Schormans (Queen Mary, University of London, United Kingdom)
Laurie Cuthbert (Queen Mary, University of London, United Kingdom)
Tiankui Zhang (Beijing University of Posts and Telecommunications, P.R. China)

Distributed Pareto-Optimal Power Control in Femtocell Networks

Duy T Ngo (McGill University, Canada)
Long Bao Le (University of Quebec, Canada)
Tho Le-Ngoc (McGill University, Canada)

Wednesday, September 14 • 10:30 - 12:00

Room: Marine, 2nd Floor

CRSM-13: Cognitive and Cooperative Radio Networks

Chair: Tin-Yu Wu

A Novel Spectrum Aware Routing Scheme for Multi-hop Cognitive Radio Mesh Networks

Parvin Shamsad (The University of Elcetro-Communications & Fujii Laboratory, Japan)

Takeo Fujii (The University of Electro-Communications, Japan)

Cognitive Relaying with Time Incentive: Protocol Design for Multiple Primary Users

Taskeen Ameer Nadkar (Indian Institute of Technology Bombay, India) Vinaykumar Mohanlal Thumar (Indian Institute of Technology, Bombay, India) Konchady Gautam Shenoy (IIT Bombay, India)

Uday B Desai (IIT Hyderabad, India)

Prof Merchant (IIT Bombay, USA)

An Efficient Pre-scanning Scheme for Handoff in Cooperative Vehicular Networks

Tin-Yu Wu (Tamkang University, Taiwan)

Wei-Tsong Lee (Tamkang university, Taiwan)

Fong-Hao Liu (National Defense University, Taiwan)

Hung-Lin Chan (Tamkang University, Taiwan)

Tsung-Han Lin (Tamkang University, Taiwan)

Outage in a Cellular Network Overlaid with an Ad hoc Network: The Uplink Case

Arshdeep S. Kahlon (Carleton University, Canada)

Shalini Periyalwar (Carleton University, Canada)

Halim Yanikomeroglu (Carleton University, Canada)

Sebastian S Szyszkowicz (Carleton University, Canada)

Trust Computation Through Anomaly Monitoring in Distributed Cognitive Radio Networks

Shameek Bhattacharjee (University of Central Florida, USA)

Saptarshi Debroy (University of Central Florida, USA)

Mainak Chatterjee (University of Central Florida, USA)

Wednesday, September 14 • 10:30 - 12:00

Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-14: Performance Modeling and Analysis

Chair: Kanshiro Kashiki

Modeling and Performance Analysis of Cooperative Communications in Cognitive Radio Networks

Mehdi Khabazian (QUWIC, Qatar)

Sonia Aissa (University of Quebec, INRS-EMT, Canada)

Further Results on the Performance of Energy Detector over Generalized Fading Channels

Oluwatobi O Olabiye (Prairie View A&M University, USA)

Annamalai Annamalai (Prairie View A&M University, USA)

Performance of Cognitive Radio Networks under ON/OFF and Poisson Primary Arrival Models

S. Lirio Castellanos-Lopez (Cinvestav-IPN, Mexico)

Felipe A. Cruz-Perez (Cinvestav-IPN, Mexico)

Genaro Hernandez-Valdez (UAM-A, Mexico)

Capacity of Cognitive Radio under Imperfect Secondary and Cross Link Channel State Information

Lokman Sboui (Tunisia Polytechnic School - University of Carthage, Tunisia)

Zouheir Rezki (King Abdullah University of Science and Technologie (KAUST), Saudi Arabia)

Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Performance based Channel Allocation in IEEE 802.22 Networks

Saptarshi Debroy (University of Central Florida, USA)

Shameek Bhattacharjee (University of Central Florida, USA)

Mainak Chatterjee (University of Central Florida, USA)

Wednesday, September 14 • 10:30 - 12:00

Room: Pier 9, Hotel Convention Level 3rd Floor

LPAN-13: Mobility and Resource Management

Chair: Jad Nasreddine

Channel Ranking Algorithm and Ranking Error Bounds: A Two Channel Case

Aamir Mahmood (Aalto University & School of Electrical Engineering, Finland) Konstantinos Koufos (TKK, Finland)

Riku Jantti (Aalto University School of Electrical Engineering, Finland)

Mobile WiMAX Video Quality and Transmission Efficiency

Victoria Sgardoni (University of Bristol & Technological Educational Institute of Chalkis Greece, United Kingdom)

David Halls (University of Bristol, United Kingdom)

Syed Mohsin Matloob Bokhari (University of Bristol, United Kingdom)

David Bull (University of Bristol, United Kingdom)

Andrew Nix (University of Bristol, United Kingdom)

Cross-Layer Interference Minimization-Oriented Channel Assignment in IEEE 802.11 WLANs

Dian Fan (University of Western Ontario, Canada)

Xianbin Wang (University of Western Ontario, Canada)

Penghui Mi (University of Western Ontario, Canada)

Femtocell wireless time-variant stochastic channel modelling related to indoor human activity

Yoann Corre (SIRADEL, France)

Mathieu Brau (SIRADEL, France)

Yves Lestienne (SIRADEL & University of Toronto, Canada)

Mobility Diversity in Mobile Wireless Networks

Veria Havary-Nassab (University of Toronto, Canada)

Shahram Shahbazpanahi (University of Ontario Institute of Technology, Canada)

Shahrokh Valaee (University of Toronto, Canada)

Wednesday, September 14 • 10:30 - 12:00

Room: Regatta, 2nd Level

LPAN-14: Relaying and Cooperative Communication - 2

Chair: Claude Oestges

Throughput Optimal Resource Management of Cooperative Networks with Mobile Clouds

Maria Kangas (Centre for Wireless Communication, University of Oulu, Finland)

Savo Glisic (University of Oulu, Finland)

Performance Analysis of Cooperative Communication with Heterogeneous Relays

MinKeun Jeong (Yonsei University & Yonsei University, Korea)

SeungGye Hwang (Yonsei, Korea) Dong Ku Kim (Yonsei University, Korea)

Janghoon Yang (Korean German Institute of Technology, Korea)

Joint Optimization of HD Video Coding Rates and Unicast Flow Control for IEEE 802.11ad Relaying

Joongheon Kim (University of Southern California, USA)

Yafei Tian (Beihang University, P.R. China)

Andreas Molisch (University of Southern California, USA)

Stefan Mangold (Disney Research, Switzerland)

Exact BEP of Cooperative MC-CDMA Systems using Selective Threshold Digital Relaying

Hela Hakim (Higher School of communications of Tunis, Tunisia)

Hatem Boujemaa (Ecole Supérieure des Communications, Tunisia)

Wessam Ajib (Université du Québec Montréal, Canada)

Joint Relay Selection and Scheduling Algorithm for Inter-Piconet Communications in Millimeter Wave Wireless Personal Area Networks

Jen-Hsi Liu (National Chiao Tung University, Taiwan)

Hsi-Lu Chao (National Chiao Tung University, Taiwan)

Wednesday, September 14 • 10:30 - 12:00
Room: Pier 4, Hotel Convention Level 3rd Floor

SL-7: Localization

Chair: Nader Moayeri

Estimation of Prior Positioning Method Performance in LTE

Torbjorn Wigren (Ericsson AB, Sweden)
Iana Siomina (Ericsson, Sweden)
Michael C Anderson (Ericsson Inc., USA)

Anchorless Localization with Local Manifold Flattening

Dan C Popescu (CSIRO, Australia)
Mark Hedley (CSIRO, Australia)
Thuraiappah Sathyan (CSIRO, Australia)

AOD/AOA/TOA-based 3D Positioning in NLOS Multipath Environments

Xinning Wei (University of Rostock, Germany)
Nico Palleit (University of Rostock, Germany)
Tobias Weber (Uni Rostock, Germany)

Precoder Design for Improving the Performance of MUSIC-based Angle-of-Arrival Estimator

Li Zhang (National University of Singapore, Singapore)
Yong Huat Chew (Institute for Infocomm Research, Singapore)
Wai-Choong Wong (National University of Singapore, Singapore)

High Performance Non-Line-of-Sight Identification using MIMO-OFDM Space Frequency Correlation Statistics

Wenjie Xu (Michigan Technological University, USA)
Seyed (Reza) Zekavat (Michigan Technological University, USA)

Wednesday, September 14 • 10:30 - 12:00
Room: Harbour A, Hotel Convention Level 3rd Floor

WACC-24: Cooperative Communication - III

Chair: Shahram Shahbazpanahi

In-band and Out-Band Relaying Configurations for Dual-carrier LTE-Advanced system

Jacek Gora (Nokia Siemens Networks, Poland)
Simone Redana (Nokia Siemens Networks, Germany)

Dynamic Decode and Forward for the Multi-Access Relay Channel with Finite Block Length

Chung-Pi Lee (National Taiwan University, Taiwan)
Hsuan-Jung Su (National Taiwan University, Taiwan)

Symbol-Asynchronous Compute-and-Forward

Hossein Najafi (University of Waterloo, Canada)
Mohamed Oussama Damen (University of Waterloo, Canada)
Are Hjørungnes (University of Oslo, Norway)

Optimization of Random Selection and Forwarding for Multiple-Relay Networks

Ioannis Chatzigeorgiou (Lancaster University, United Kingdom)
Alberto Tarable (Politecnico di Torino, Italy)

A Performance Study of Energy Detection for Dual-Hop Transmission with Fixed Gain Relays: Area under ROC Curve (AUC) Approach

Shumon Alam (Prairie View A&M University, USA)
Oluwatobi O Olabiye (Prairie View A&M University, USA)
Olusegun O. Odejide (Prairie View A&M University, USA)
Annamalai Annamalai (Prairie View A&M University, USA)

Wednesday, September 14 • 10:30 - 12:00
Room: Harbour B, Hotel Convention Level 3rd Floor

WACC-25: Radio Resource Management - III

Chair: Rainer Schoenen

Wireless Mesh Networks: Energy - Capacity Tradeoff and Physical Layer Parameters

Anis Ouni (Universite de Lyon, INRIA, INSA Lyon, CITI, France)
Herve Rivano (CNRS & Universite de Lyon, INRIA, INSA Lyon, CITI, France)
Fabrice Valois (INSA Lyon, France)

Network-Power-Saving Resource Allocation Algorithm with Hybrid Communication Mode for OFDMA Relay Networks

Jingon Joung (Institute for Infocomm Research, Singapore)
Sumei Sun (Institute for Infocomm Research, Singapore)

Distributed Antenna Systems With Frequency Reuse

Hassan Osman (University of Kent, United Kingdom)
Huiling Zhu (University of Kent, United Kingdom)
Temitope Alade (University of Kent, United Kingdom)

Full Reuse Resource Partition for Multihop Relay Networks with Tree and Mesh Structures

Bin Fan (Orange Labs & French Telecom, France)
Ahmed Saadani (Orange Labs, France)

EVM Considerations for Convergent Multi-Standard Cellular Base-Station Transmitters

Sandeep Kowlgi (Institut Telecom - ENST & NXP Semiconductors, France)
Paul Mattheijssen (NXP Semiconductors, The Netherlands)
Berland Corinne (ESIEE Paris, Lamips NXP-CRISMAT Caen France, France)
Timothy Ridgers (NXP Semiconductors, France)

Wednesday, September 14 • 10:30 - 12:00
Room: Harbour C, Hotel Convention Level 3rd Floor

WACC-26: Interference Management - II

Chair: Luc Vandendorpe

MSE-Based Orthogonal Beamformer Design for Interference Alignment in a MU-MIMO Cellular Network

Mohammad Ali Torabi (Ecole Polytechnique de Montreal, Canada)
Jean-Francois Frigon (Ecole Polytechnique de Montreal and GERAD, Canada)
Christian Cardinal (Ecole Polytechnique de Montreal, Canada)

Optimal Degree of Freedom for MIMO Interference Channels with Constant Channel Coefficients

Sungkyu Jung (Seoul National University, Korea)
Jungwoo Lee (Seoul National University, Korea)

Capacity Region of K-User Discrete Memoryless Interference Channels with a Mixed Strong-Very Strong Interference

Abhinav Ganesan (Indian Institute of Science, Bangalore, India)
B. Sundar Rajan (Indian Institute of Science, India)

Generalized Precoder Design for MIMO Interference Channel Based on Interference Alignment

Huan Sun (Alcatel-Lucent Shanghai Bell Co., Ltd., P.R. China)
Wei Fang (Alcatel-Lucent Shanghai Bell, P.R. China)

A Divide-and-Conquer Approach to Mitigate Relay-to-Relay Interference

Abdallah Bou Saleh (Nokia Siemens Networks & Aalto University School of Electrical Engineering, Germany)
Omer Bulakci (Nokia Siemens Networks Radio Systems & Aalto University School of Electrical Engineering, Germany)
Simone Redana (Nokia Siemens Networks, Germany)
Bernhard Raaf (Nokia Siemens Networks, Germany)
Jyri Hamalainen (Helsinki University of Technology, Finland)

Wednesday, September 14 • 10:30 - 12:00
Room: Pier 3, Hotel Convention Level 3rd Floor

WACC-27: Analysis, Simulation and Performance Evaluation - II

Chair: Kei Sakaguchi

Performance of Two-Way Amplify-and-Forward Relaying with Adaptive Modulation over Nakagami-m Fading Channels

Yongliang Zhang (Beijing University of Posts and Telecommunications, P.R. China)
Chang Yongyu (Beijing University of Posts & Telecommunications, P.R. China)
Liyun Dai (Beijing University of Posts and Telecommunications, P.R. China)
Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)

Symbol Error Rate Analysis of Relay-based Wireless Systems

Ibrahim Abualhaol (Khalifa University, UAE)

On the Performance Analysis of Cooperative Non-Regenerative Relay Systems over Generalized Fading Channels

Oluwatobi O Olabiye (Prairie View A&M University, USA)
Annamalai Annamalai (Prairie View A&M University, USA)

Outage Performance in Cooperative CDMA Systems over Nakagami-m Fading Channels

Ali Moftah Ali Mehemed (Concordia University, Canada)
Walaa Hamouda (Concordia University, Canada)

Performance Analysis of Opportunistic Relaying Over Imperfect Non-identical Log-normal Fading Channels

Ashkan Kalantari (K. N. Toosi University of Technology, Iran)
MohammadAli Mohammadi (K.N.Toosi University of Technology, Iran)
Mehrdad Ardebilipour (Khajeh Nasir University, Iran)

Wednesday, September 14 • 10:30 - 12:00

Room: Pier 5, Hotel Convention Level 3rd Floor

WACC-28: Routing and Scheduling - II

Chair: Witold Krzymien

Utility-based Joint Routing and Spectrum Partitioning in Relay LTE-Advanced Networks

Tao Liu (Shanghai Jiao Tong University, P.R. China)
Mengtian Rong (Shanghai Jiao Tong University, P.R. China)

LTE Frequency Selective Scheduling Performance and Improvements

Peter Okvist (Ericsson Research, Sweden)
Arne Simonsson (Ericsson, Sweden)
Henrik Asplund (Ericsson Research, Ericsson AB, Sweden)

User Scheduling Scheme for Network MIMO System with Feedback Reduction

Wen Chunyan (Zhejiang University, P.R. China)
Zhaoyang Zhang (Zhejiang University, P.R. China)
Rui Yin (Zhe Jiang University, P.R. China)
Chao Wang (Zhejiang University, P.R. China)

Cell-Grouping Based Distributed Beamforming and Scheduling for Multi-cell Cooperative Transmission

Xueying Hou (Beihang University, P.R. China)
Emil Bjornson (KTH Royal Institute of Technology, Sweden)
Chenyang Yang (Beihang University, P.R. China)
Mats Bengtsson (Royal Institute of Technology, Sweden)

Multiuser Hybrid Switched-Selection Diversity Systems

Mohammad Shafqeh (Texas A&M University at Qatar, Qatar)
Hussein Alnuweiri (Texas A&M University, Qatar)
Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Wednesday, September 14 • 10:30 - 12:00

Room: Pier 8, Hotel Convention Level 3rd Floor

WNHC-7: WNHC - Wireless Sensor Networks & MANET

Chair: Allen Levesque

X-Geocasting: Data Dissemination to Mobile Sink Groups in Wireless Sensor Networks

Soochang Park (Chungnam National University, Korea)
Euisin Lee (Chungnam National University, Korea)
Yongbin Yim (Chungnam National University, Korea)
Fucai Yu (University of Electronic Science and Technology of China, P.R. China)
Sang-Ha Kim (Chungnam National University, Korea)

Data Dissemination Protocol based on Independent Grid Structure in Wireless Sensor Networks

Euisin Lee (Chungnam National University, Korea)
Soochang Park (Chungnam National University, Korea)
Hosung Park (Chungnam National University, Korea)
Yongbin Yim (Chungnam National University, Korea)
Sang-Ha Kim (Chungnam National University, Korea)

Energy Efficient Data Dissemination Protocol for a Mobile Sink Group in WSNs

Hee-Sook Mo (ETRI, Korea)

Weighted Sum-Rate Maximization in Singlecast and Multicast Wireless Networks - Global Optimum via Branch and Bound

Marian Codreanu (University of Oulu, Finland)
Pradeep Chaturanga Weeraddana (University of Oulu, Finland)
Matti Latva-aho (University of Oulu, Finland)
Anthony Ephremides (University of Maryland at College Park, USA)

Social Mobility Models using Ant Colony Systems

Leila Harfouche (Cnam/ Cedric Laboratory, France)
Herve Costantini (Conservatoire National des Arts et Metiers, France)
Selma Boumerdassi (Conservatoire National des Arts et Metiers, France)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 7, Hotel Convention Level 3rd Floor

AID-10: Self-Configuration Techniques

Chair: Tony Q. S. Quek

Self-organized Network Management functions for Relay enhanced LTE-Advanced Systems

Konstantinos Samdanis (NEC Europe Ltd., Germany)
Marcus Brunner (NEC Europe Ltd., Germany)

Energy-Efficient Radio Resource Management in Self-Organised Multi-Radio Wireless Mesh Networks

Lucio Studer Ferreira (Instituto Superior Tecnico, Technical University of Lisbon, Portugal)
Luis M. Correia (IST - Technical University Lisbon, Portugal)

Self-Configuring Switched Multi-Element Antenna System for Interference Mitigation in Femtocell Networks

Rouzbah Razavi (Bell labs, Ireland)
Holger Clausen (Bell Labs, Alcatel-Lucent, United Kingdom)

Base Station distributed Handover Optimization in LTE Self-Organizing Networks

Lutz Ewe (Bell Labs & Alcatel-Lucent, Germany)
Hajo Bakker (Alcatel-Lucent Bell Labs Germany, Germany)

Cost and Feasibility Analysis of Self-deployed Cellular Network

Du Ho Kang (Royal Institute of Technology (KTH), Sweden)
Ki Won Sung (Royal Institute of Technology (KTH), Sweden)
Jens Zander (Royal Institute of Technology (KTH), Sweden)

Wednesday, September 14 • 13:30 - 15:00

Room: Regatta 2nd Floor

AID-11: Frequency Re-Use/Cellular System Techniques

Chair: Alagan Anpalagan

Adaptive Flexible Spectrum Usage Algorithms in Heterogeneous Cell Deployment

Joao Mestre (Aalborg University, Denmark)
Nuno Pratas (Center for TeleInfrastructure (CTIF), Aalborg University & Instituto de Telecomunicacoes, Instituto Superior Tecnico, Denmark)
Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark)
Antonio J. Rodrigues (IT / Instituto Superior Tecnico, Portugal)
Ramjee Prasad (Center for TeleInfrastruktur (CTIF), Aalborg University, Denmark)

A Spatial Study of Mixed Wireless and Wireline Heterogeneous Networks

Hsin-Yeh Chen (Academia Sinica, Taiwan)
Chia-han Lee (Academia Sinica, Taiwan)

A Performance Evaluation Framework for Control Loop Interaction in Self Organizing Networks

Xavier Gelabert (Orange Labs, France)
Bernard Sayrac (Orange Labs, France)
Sana Ben Jemaa (France Telecom Research and Development Division, France)

Efficiency of Partial Frequency Reuse in Power Used Depending on User's Selection for Cellular Networks

Bujar Krasniqi (Vienna University of Technology, Austria)
Christoph F Mecklenbrauker (Vienna University of Technology, Austria)

Adaptive Handoff Initiation Method for Improving Throughput in Data-Oriented Communications Networks

Hsien-Wen Chang (Industrial Technology Research Institute, Taiwan)
Li-Chun Wang (National Chiao Tung University, Taiwan)

Wednesday, September 14 • 13:30 - 15:00

Room: Marine, 2nd Floor

CRSM-15: Cognitive Radio Performance

Chair: Chintha Tellambura

On Adaptive Modulation and Power Control for Cognitive Radios with Primary User Outage Constraint

Chin Choy Chai (Institute for Infocomm Research, Singapore)
Yong Huat Chew (Institute for Infocomm Research, Singapore)

Performance of a Sensor Network Aided Cognitive Radio System

Pal R Gronsund (Telenor & Simula Research Laboratory, Norway)
Ole Grondalen (Telenor, Norway)

Performance of Cooperative Spectrum Sensing with Correlated Cognitive Users' Decisions

Lamiaa R. Khalid (Ryerson University, Canada)
Alagan Anpalagan (Ryerson University, Canada)

Aggregate Interference and System Performance in Finite Area Cognitive Radio Networks

Luxmiram Vijayandran (Norwegian University of Science and Technology (NTNU), Norway)
Prathapasinghe Dharmawansa (Hong Kong University of Science and Technology, Hong Kong)
Torbjorn Ekman (Norwegian University of Science and Technology, Norway)
Chintha Tellambura (University of Alberta, Canada)

Controlling the Interference from Multiple Secondary Systems at the TV Cell Border

Konstantinos Koufos (TKK, Finland)
Kalle Ruttik (Aalto University, Finland)
Riku J ntti (Aalto University School of Electrical Engineering, Finland)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-16: Cognitive Radio Resource Management

Chair: Nandana Rajatheva

Spectrum Markets for Service Provider Spectrum Trading with Reinforcement Learning

Nadeem Abji (University of Toronto, Canada)
Alberto Leon-Garcia (University of Toronto, Canada)

Cooperative Game Theory and Auctioning for Spectrum Allocation in Cognitive Radios

Jayaprakash Rajasekharan (Aalto University, Finland)
Jan Eriksson (Aalto University School of Science and Technology, Finland)
Visa Koivunen (Helsinki University of Technology, Finland)

Weighted Sum Rate Maximization in the Underlay Cognitive MISO Interference Channel

Laurent Gallo (Politecnico di Torino, Italy)
Francesco Negro (Eurecom, France)
Irfan Ghauri (Intel Mobile Communications, France)
Dirk Slock (Eurecom, France)

Opportunistic Load and Spectrum Management for Mobile Communications Energy Efficiency

Oliver D Holland (King's College London, United Kingdom)
Orlando Cabral (IT-DEM, University of Beira Interior, Portugal)
Fernando J. Velez (University of Beira Interior & Instituto de Telecomunicacoes, Portugal)
Adnan Aijaz (King's College London, United Kingdom)
Paul Pangalos (Kings College London, United Kingdom)
Hamid Aghvami (King's College London, United Kingdom)

ENPA and EBPA Models for Primary User Activity Based Power Allocation in Cognitive Systems

Mathew Pradeep Goonewardena (Telecom Sud Paris & Institut Telecom, France)
Nandana Rajatheva (Asian Institute of Technology & Centre for Wireless Communications, University of Oulu, Thailand)
Tijani Chahed (Telecom SudParis, France)
Djamal Zeghlache (Institut TELECOM, TELECOM SudParis, France)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 9, Hotel Convention Level 3rd Floor

LPAN-15: Multihop Routing

Chair: Frank Li

An Iterative Routing Algorithm for Energy Minimization in Coded Wireless Networks

Linyu Huang (City University of Hong Kong, Hong Kong)
Chi Wan Sung (City University of Hong Kong, Hong Kong)

A New Proposal for Reliable Unicast and Multicast Transport in Delay Tolerant Networks

Arshad Ali (Telecom SudParis - UMR CNRS SAMOVAR & UPMC Paris VI, France)
Tijani Chahed (Telecom SudParis, France)
Eitan Altman (INRIA, France)
Manoj Panda (INRIA Sophia Antipolis, France)
Lucile Sassatelli (I3S - CNRS Universite de Nice UMR, France)

Replication Schemes for Peer-to-Peer Content in Wireless Mesh Networks with Network Support

Amr G M Al Asaad (The University of British Columbia, Canada)
Sathish Gopalakrishnan (University of British Columbia, Canada)
Victor CM Leung (The University of British Columbia, Canada)

Performance Evaluation of Wireless Multihop Communications for an Indoor Environment

Petros Spachos (University of Toronto, Canada)
Francis M. Bui (University of Saskatchewan, Canada)
Liang Song (University of Toronto, Canada)
Yves Lestanlen (SIRADEL & University of Toronto, Canada)
Dimitrios Hatzinakos (University of Toronto, Canada)

On the Statistical Behaviors of Network-level Features within MANETs

Deepali Arora (University of Victoria, Canada)
Eamon Millman (University of Victoria, Canada)
Stephen W Neville (University of Victoria, Canada)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 4, Hotel Convention Level 3rd Floor

SL-8: Cooperative Localization Methods

Chair: Nader Moayeri

A Particle Filtering Algorithm for Cooperative Tracking of Nodes in Wireless Networks

Thuraiappah Sathyan (CSIRO, Australia)
Mark Hedley (CSIRO, Australia)

Cooperative TDOA Estimation with Trigger Relay

Hao Lu (Delft University of Technology & Jilin University, The Netherlands)
Pablo Martinez (Delft University of Technology, The Netherlands)
Homayoun Nikookar (Delft University of Technology, The Netherlands)

Cooperative Geo-location in Underground Mines: A Novel Fingerprint Positioning Technique Exploiting Spatio-Temporal Diversity

Shehadi Dayekh (INRS-EMT, Canada)
Sofiene Affes (INRS-EMT, Canada)
Nahi Kandil (Universite du Quebec en Abitibi-Temiscamingue, Canada)
Chahe Nerguizian (Ecole Polytechnique, Canada)

Cooperative Network Localizability via Semidefinite Programming

Hadi Nouredine (Telecom Bretagne, France)
Damien Castelain (Mitsubishi Electric MERC France, France)
Ramesh Mahendra Pyndiah (institut Telecom/TELECOM Bretagne, France)

Wednesday, September 14 • 13:30 - 15:00

Room: Harbour A, Hotel Convention Level 3rd Floor

WACC-29: Channel Modeling, Estimation and Equalization - II

Chair: Xianbin Wang

Robust Training Sequence Design for Spatially Correlated MIMO Channels and Arbitrary Colored Disturbance

Nafiseh Shariati (KTH Royal Institute of Technology, Sweden)
Mats Bengtsson (Royal Institute of Technology, Sweden)

Second-Order Moment-Based Direction Finding of a Single Source for ULA systems

Faouzi Bellili (Institut national de la recherche scientifique, Canada)
Sofiene Affes (INRS-EMT, Canada)
Alex Stephenne (Huawei & INRS-EMT, Canada)

Hybrid Time/Frequency Domain Compensator for RF Impairments in OFDM Systems

Adnan Kiayani (Tampere University of Technology, Finland)
Lauri Anttila (Tampere University of Technology, Finland)
Yaning Zou (Tampere University of Technology, Finland)
Mikko Valkama (Tampere University of Technology, Finland)

Channel Reciprocity of Compact Antenna Array and the Calibration

Jing Shi (Alcatel-Lucent Shanghai Bell Co., Ltd, P.R. China)
Luo (Alcatel Lucent, P.R. China)
Huan Sun (Alcatel-Lucent Shanghai Bell Co., Ltd., P.R. China)

Wideband MIMO Channel Diagonalization in the Time Domain

Rasmus Brandt (KTH Royal Institute of Technology, Sweden)
Mats Bengtsson (Royal Institute of Technology, Sweden)

Wednesday, September 14 • 13:30 - 15:00

Room: Harbour C, Hotel Convention Level 3rd Floor

WACC-30: Relay Assisted Communications - III

Chair: Hichem Besbes

Error Probability Analysis of Two-Way Amplify-and-Forward Relaying in the Presence of Imperfect Channel Estimations

Salama Said Ikki (INRS, Canada)
Sonia A ssa (University of Quebec, INRS-EMT, Canada)

Outage Probability of Dual-Hop Partial Relay Selection with Feedback Delay in the Presence of Interference

Fawaz AL-Qahtani (Texas A&M University at Qatar & Education City, Qatar)
Redha M Radaydeh (KAUST, Saudi Arabia)
Hussein Alnuweiri (Texas A&M University, Qatar)

Bounds on the Throughput Performance of PU2RC

Ata Sattarzadeh (University of Tehran, Iran)
Ali Olfat (University of Tehran, Iran)

Performance Analysis of SC-FDMA in the Presence of Receiver Phase Noise

Gokul Sridharan (University of Toronto, Canada)
Teng Joon Lim (National University of Singapore, Singapore)

Fairness Analysis in Cellular Networks using Stochastic Petri Nets

Rainer Schoenen (RWTH Aachen University, Faculty 6, Germany)
Akram Bin Sediq (Carleton University, Canada)
Halim Yanikomeroglu (Carleton University, Canada)
Gamini Senarath (Huawei Technologies Canada CO., LTD., Canada)
Zhijun Chao (Huawei Technologies, P.R. China)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 3, Hotel Convention Level 3rd Floor

WACC-31: MIMO Techniques - III

Chair: Liang Liu

On Optimum End-to-End Distortion in Delay-Constrained Wideband MIMO Systems

Jinhui Chen (Alcatel-Lucent Shanghai Bell, P.R. China)
Dirk Slock (Eurecom, France)

Adaptive Beamforming Algorithms for Wireless Link Layer Multicasting

Mohammad Khojastepour (NEC Laboratories America, USA)
Amin Khajehnejad (Caltech, USA)
Karthikeyan Sundaresan (NEC Labs America, USA)
Sampath Rangarajan (NEC Labs America, USA)

SCSI Aided Multi-Beam Selection for Transmit Correlated Channels

Qiang Sun (Southeast University, P.R. China)
Rui Liu (Southeast University, P.R. China)
Yuan Zhang (Southeast University, P.R. China)
Jue Wang (National Mobile Communications Research Laboratory, P.R. China)
Xiqi Gao (Southeast University, P.R. China)

Performance of LTE in Rural Areas - Benefits of Opportunistic Multi-User MIMO

Imran Latif (Eurecom Institute & Telecom ParisTech, France)
Florian Kaltenberger (Eurecom, France)
Rizwan Ghaffar (University of Waterloo, Canada)
Raymond Knopp (Institut Eurecom, France)
Dominique Nussbaum (Eurecom, France)
Herve Callevaert (Eurecom, France)
Gael Scot (CNES, France)

Improving Downlink Multiuser MIMO Throughput in LTE-Advanced Cellular Systems

Guosen Yue (NEC Laboratories America, Inc., USA)
Narayan Prasad (NEC Labs America, Princeton, USA)
Meilong Jiang (NEC Labs America, USA)
Mohammad Khojastepour (NEC Laboratories America, USA)
Sampath Rangarajan (NEC Labs America, USA)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 5, Hotel Convention Level 3rd Floor

WACC-32: Modulation and Coding - II

Chair: Robert Bultitude

On the Performance of Hybrid-ARQ with Code Combining over Double Rayleigh Fading Channels

Ali Chelli (University of Agder, Norway)
Matthias P tzold (University of Agder, Norway)

Superposition Coding for Successive Refinement of Channel Estimation

Ali Ozgur Yilmaz (Middle East Technical University, Turkey)

On the Distribution of Instantaneous Power in Single Carrier: Effective Numerical Approach

Igor Gutman (Ben-Gurion University of the Negev, Israel)
Dov Wulich (Ben Gurion University, Israel)

Completion Delay Reduction in Lossy Feedback Scenarios for Instantly Decodable Network Coding

Sameh Sorour (University of Toronto, Canada)
Shahrokh Valaee (University of Toronto, Canada)

Novel Approximation for the Gaussian Q -Function and Related Applications

Qinghua Shi (University of Electro-Communications, Japan)

Wednesday, September 14 • 13:30 - 15:00

Room: Pier 8, Hotel Convention Level 3rd Floor

WACC-38: Multiuser and Cooperation

Chair: Igor Dotlic

Reverse Link Sum Rate for Multi-Cell Multi-User Cellular Systems with Successive Interference Cancellation

Qiuping Huang (Beijing University of Posts and Telecommunications, P.R. China)
Xiaofeng Liu (China Academy of Telecommunications Research, MITT, P.R. China)
Hongwen Yang (Beijing University of Posts and Telecommunications, P.R. China)

Multi-User Cross-Layer Optimization for Delay-Sensitive Applications Over Wireless Multihop Mesh Networks

Alaa Awad (Cairo Univ, Egypt)
Omar Nasr (Cairo University, Egypt)
Mohamed Khairy (Cairo Univ, Egypt)

Joint Cooperative Scheduling and Power Control for Interference-Limited Wireless Networks

Long Bao Le (University of Quebec, Canada)
Tho Le-Ngoc (McGill University, Canada)

Controlling Variability of Dynamic RRM in Relay Enhanced OFDMA-Based Networks

Mikhail Pikhletsky (Huawei Technologies, Russia)
Farid Khafizov (Huawei Technologies, USA)
Jietao Zhang (Huawei Technologies Co., Ltd., P.R. China)
Hongcheng Zhuang (Huawei Technologies Co., Ltd, P.R. China)

Wednesday, September 14 • 15:30 - 17:00
Room: Pier 7, Hotel Convention Level 3rd Floor

AID-12: Cooperative Techniques

Chair: Raviraj Adve

Metrics for Optimal Relay Selection in Cooperative Wireless Networks

Rasool Sadeghi (University of Aveiro, Portugal)
Jo o Paulo Barraca (University of Aveiro & Instituto de Telecomunicacoes, Portugal)
Rui L Aguiar (University of Aveiro & Instituto de Telecomunicacoes, Portugal)

Cooperation and Competition between Wireless Networks in Shared Spectrum

Du Ho Kang (Royal Institute of Technology (KTH), Sweden)
Ki Won Sung (Royal Institute of Technology (KTH), Sweden)
Jens Zander (Royal Institute of Technology (KTH), Sweden)

LF-Ant: A Bio-inspired Cooperative Cross-layer Design for Wireless Sensor Networks

Marcelo Portela Sousa (Federal University of Campina Grande, Brazil)
Waslon Terlizzie Araujo Lopes (UFCEG - Federal University of Campina Grande & IECOM - Institute for Advanced Studies in Communications, Brazil)
Marcelo S. Alencar (Federal University of Campina Grande, Brazil)

Energy Efficient Cooperative Strategies in Hybrid Aerial-Terrestrial Networks for Emergencies

Sithamparanathan Kandeepan (RMIT University, Australia)
Karina Mabeil Gomez (Create-Net & The University of Trento, Italy)
Tinku Rasheed (Create-Net Research, Italy)
Laurent Reynaud (Orange Labs, France)

Consensus- Based Decentralization of Interior Point Methods For Heterogeneous Networks Energy Saving

Mourad Khanfouci (Mitsubishi electric research center Europe (MERCE), France)
Nicolas Gresset (Mitsubishi Electric Research Centre Europe, France)

Wednesday, September 14 • 15:30 - 17:00
Room: Marine, 2nd Floor

CRSM-17: Cognitive Radio and HetNet Performance

Chair: Muhammad Imadur Rahman

Interference and Performance Analysis for Cognitive Adhoc Network with Relay Assisted Primary Link

Uditha Wijewardhana (Asian Institute of Technology, Thailand)
Nandana Rajatheva (Asian Institute of Technology & Centre for Wireless Communications, University of Oulu, Thailand)
Matti Latva-aho (University of Oulu, Finland)

Symbol Error Rate Analysis in Multiuser Underlay Cognitive Radio Systems

Liang Li (Technische Universitat Darmstadt, Germany)
Philemon Ivan Derwin (Technische Universitat Darmstadt, Germany)
Marius Pesavento (Technische Universitat Darmstadt, Germany)

Experimental and Analytical Study regarding Transmission Quality of Wireless LAN System - for Implementation of Heterogeneous Wireless Network

Kanshiro Kashiki (KDDI R&D Laboratories Inc., Japan)
Akira Yamaguchi (KDDI R&D Laboratories, Inc., Japan)

Performance of Neural Network Based Distributed Radio Resource Usage Optimization Algorithms in Realistic Heterogeneous Wireless Networks

Mikio Hasegawa (Tokyo University of Science, Japan)
Kentaro Ishizu (National Institute of Information and Communications Technology, Japan)
Homare Murakami (National Institute of Information and Communications Technology, Japan)
Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)

Wednesday, September 14 • 15:30 - 17:00
Room: Pier 2, Hotel Convention Level 3rd Floor

CRSM-18: Spectrum Sensing, Access and Management

Chair: Tony Q. S. Quek

Distributed Compressed Sensing for Block-sparse Signals

Xing Wang (Beijing University of Posts and Telecommunications, P.R. China)
Guo Wenbin (Beijing University of Posts and Telecommunications, P.R. China)
Yang Lu (Beijing University of Posts and Telecommunications, P.R. China)
Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)

A Primary Traffic Aware Opportunistic Spectrum Sensing for Cognitive Radio Networks

Fan Zhang (the Hong Kong University of Science & Technology, Hong Kong)
Wei Wang (Zhejiang University, P.R. China)
Zhaoyang Zhang (Zhejiang University, P.R. China)

An Autoregressive Approach for Spectrum Occupancy Modeling and Prediction Based on Synchronous Measurements

Ali Gorcin (USF, USA)
Hasari Celebi (Texas A&M University at Qatar, Qatar)
Khalid A. Qaraqe (Texas A&M University at Qatar, USA)
Huseyin Arslan (University of South Florida, USA)

Performance Evaluation of Secondary Users in Dynamic Spectrum Access System

Huang Qing (Beijing jiaotong University, P.R. China)
Shaoyi Xu (Beijing Jiaotong University, P.R. China)
Xiaojun Jin (Beijing Jiaotong University, P.R. China)

Wednesday, September 14 • 15:30 - 17:00
Room: Pier 3, Hotel Convention Level 3rd Floor

ITN-4: Radio Technologies, ITS Communications

Chair: Yaser P. Fallah

NEMO Route Optimization with Strong Authentication for Aeronautical Communications

Christian Bauer (German Aerospace Center (DLR), Germany)
On the Single-Target Accuracy of OFDM Radar Algorithms
Martin Braun (Karlsruhe Institute of Technology (KIT), Germany)
Christian Sturm (Karlsruhe Institute of Technology (KIT), Germany)
Friedrich K. Jondral (Karlsruhe Institute of Technology, Germany)

Extending the DSRC's Control Channel using Cognitive Networking Concepts and Fuzzy Logic

Ali J. Ghandour (American University of Beirut, Lebanon)
Kassem Fawaz (American University of Beirut, Lebanon)
Hassan A. Artail (American University of Beirut, Lebanon)
Ramsey Hamade (American University of Beirut, Lebanon)

Infrastructure-to-Vehicle Cooperative Communications with Decode-and-Forward Relaying

Mohamed F. Feteiha (University of Waterloo, Canada)
Murat Uysal (Ozyegin University, Turkey)

Wednesday, September 14 • 15:30 - 17:00

Room: Harbour A, Hotel Convention Level 3rd Floor

WACC-33: Multiple Access Techniques - II

Chair: Salama Ikki

Sum MSE Optimization for Downlink Multiuser MIMO Systems with per Antenna Power Constraint: Downlink-Uplink Duality Approach

Tadilo Endeshaw Bogale (University of Catolique de Louvain, Belgium)
Luc Vandendorpe (University of Louvain, Belgium)

Application of Telser's Safety-First Criterion to Adaptive Power Control

Adrian Kotelba (VTT Technical Research Centre of Finland, Finland)
Aarne O M mme (VTT, Finland)

Adaptive Bit Allocation Methods for Multi-cell Joint Processing Systems with Limited Feedback

Seungpyo Yu (Korea University & Samsung Electronics, Korea)
Young-Tae Kim (Korea University, Korea)
Seok-Hwan Park (Korea University, Korea)
Inkyu Lee (Korea University, Korea)

A Constellation Power Allocation Scheme for Two-User Gaussian MAC

J. Harshan (Broadcom Communications Technologies, India)
B. Sundar Rajan (Indian Institute of Science, India)

Adaptive Differential Feedback in Time-Varying Multiuser MIMO Channels

Muhammad Nazmul Islam (WINLAB, Rutgers University, USA)
Raviraj Adve (University of Toronto, Canada)

Wednesday, September 14 • 15:30 - 17:00

Room: Harbour B, Hotel Convention Level 3rd Floor

WACC-34: Antenna and Propagation

Chair: Mohamed Siala

Controlling Coupling Between Two Transmitting Antennas for MIMO Handset Applications

Shirook Ali (Research In Motion Ltd., Canada)
James Warden (Research In Motion, Texas, USA)

Modelling, Measurement and Analysis of Narrowband Fast Fading on Relay Channels

Georgy Levin (University of Ottawa, Canada)
Robert J.C. Bultitude (Communications Research Centre, Canada)
Hong Zhu (Communications Research Centre, Canada)

Design of RF/Microwave Efficient Buildings Using Frequency Selective Surface

Irfan Ullah (Edith Cowan University, Australia)

Spectral Efficiency Analysis of Distributed Antenna System for In-Building Wireless Communication

Temitope Alade (University of Kent, United Kingdom)
Huiling Zhu (University of Kent, United Kingdom)
Hassan Osman (University of Kent, United Kingdom)

Wednesday, September 14 • 15:30 - 17:00

Room: Harbour C, Hotel Convention Level 3rd Floor

WACC-35: Modulation and Coding - III

Chair: Tadashi Matsumoto

Heuristic Approach to Construct Three-Dimensional Codes for Feedback-Based MIMO-CDMA

Yuya Hayashi (Kochi University of Technology, Japan)
Masanori Hamamura (Kochi University of Technology, Japan)

FPGA Design of a Truncated SVD Based Receiver for the detection of SEFDM Signals

Ryan C Grammenos (University College London, United Kingdom)
Safa Isam (University College London, United Kingdom)
Izzat Darwazeh (University College London, United Kingdom)

Linear Dispersion Codes Design for Asynchronous Cooperative Communications

Wenjin Wang (University of Reading, United Kingdom)
Fu-Chun Zheng (The University of Reading, United Kingdom)

Cyclic Prefix and Intra-fix Insertion for Multi-h CPM based on Tilted Phase Transformation

Sajid Saleem (Georgia Institute of Technology, USA)
Gordon St ber (Georgia Institute of Technology, USA)

Wednesday, September 14 • 15:30 - 17:00

Room: Pier 4, Hotel Convention Level 3rd Floor

WACC-36: Field Tests and Measurements

Chair: Yejian Chen

Large Scale Field Trial Results on Time Domain Compression for Uplink Joint Detection

Michael Grieger (Technische Universitat Dresden, Germany)
Gerhard Fettweis (Technische Universitat Dresden, Germany)

Radio Propagation Measurements and Channel Characterisation Pertinent to Urban Microcellular Communications Systems Incorporating Relay Links

Robert J.C. Bultitude (Communications Research Centre, Canada)
Georgy Levin (University of Ottawa, Canada)
Hong Zhu (Communications Research Centre, Canada)

On the Characterization of Multi-link Shadow Fading Correlation for Urban Relaying Systems

Quang Hien Chu (Orange Labs, France)
Jean-Marc Conrat (France T I com R&D, France)
Jean-Christophe Cousin (Telecom ParisTech, France)

Field Trial Results for Integrated WiMAX and Radio-over-Fiber Systems on High Speed Rail

Hsien-Wen Chang (Industrial Technology Research Institute, Taiwan)
Ming-Chien Tseng (Industrial Technology Research Institute, Taiwan)
Shi-Yang Chen (Industrial Technology Research Institute, Taiwan)
Ming-Hung Cheng (Industrial Technology Research Institute, Taiwan)
Sz-Kai Wen (Industrial Technology Research Institute, Taiwan)

Wednesday, September 14 • 15:30 - 17:00

Room: Pier 5, Hotel Convention Level 3rd Floor

WACC-37: Wireless IP and Multimedia Services

Chair: Ivan Vukovic

Optimization of Rateless-Coded Asynchronous Multimedia Multicast

Yu Cao (Queen's University, Canada)
Steven D Blostein (Queen's University, Canada)
Wai-Yip Geoffrey Chan (Queen's University, Canada)

CSOHS Voice Capacity in HSPA networks with realistic overhead channel modeling

Pavan Kumar Vitthaladevuni (Qualcomm Inc., USA)
Rohit Kapoor (Qualcomm Inc., USA)
Ozcan Ozturk (Qualcomm, USA)
Wei Zeng (Qualcomm, USA)

Application-centric Content Delivery Schemes for Future Wireless Networks

Pietro Lungaro (Royal Institute of Technology (KTH), Sweden)
Zary Segall (UMBC, USA)

Dynamic Power Allocation for Multicast/Broadcast Services with Cooperative Distributed Antenna Systems

Ping-Heng Kuo (Industrial Technology Research Institute, Taiwan)
Pangan Ting (Tsing Hua University, Taiwan)

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Track 1: PHY and Fundamentals

- Antennas and propagation
- Modulation, equalization and coding
- Signal processing for communications
- MIMO transmission
- Channel modeling and estimation
- Synchronization techniques
- Cognitive radio, ultra-wideband
- Cooperative techniques
- WLAN, WPAN, WBAN
- Low-power transmission design
- Enabling transmission technologies
- Signal processing for wireless communications
- Propagation models for high frequency channels

Track 3: Mobile and Wireless Networks

- Cognitive wireless networks
- Cooperative communications
- Ecological wireless networks
- Multi-hop networks
- Ad hoc networks
- Sensor networks
- Local dependent networks
- Mobile computing
- Analysis, simulation, measurement and performance evaluation
- Congestion and admission control
- Routing, QoS and scheduling
- Satellite communications
- Transport layer issues
- Wireless multicasting, broadcasting, and geocasting
- Mobile and Wireless IP

Track 2: MAC and Cross-Layer Design

- Multiple access techniques
- Cognitive and cooperative MAC
- Collaborative algorithms
- MAC for mesh, ad hoc, relay, and sensor networks
- Network information theory
- Radio resource management and allocation, scheduling
- Cross-layer design, cross-layer security
- Software defined radio, RFID
- Adaptability and reconfigurability
- Wireless MAC protocols: design and analysis
- B3G/4G Systems, WiMAX, WLAN, WPAN
- QoS provisioning in MAC
- IEEE 802.11/15/16

Track 4: Services, Applications, and Business

- Next generation digital home networks
- Secure networking
- Wireless robotics
- Mobile multimedia services
- Authentication, authorization and accounting
- Audio and video broadcast applications
- In-car/intra-car communications
- Millimeter wave applications
- Wireless telemedicine and e-health services
- Emerging wireless/mobile applications
- Context and location-aware wireless services & applications
- Service oriented architectures, service portability
- Innovative user interfaces, P2P services for multimedia
- Personalization, service discovery, profiles and profiling
- Wireless emergency and security systems
- Cognitive radio and sensor-based applications

CALL FOR TUTORIALS & WORKSHOPS

Proposals for tutorials and workshops are solicited on hot topics for future wireless and mobile communications systems and applications.

CALL FOR PANELS

Panel proposals are also solicited on technical, business and policy-related issues and opportunities for the wireless communications industry.

IMPORTANT DATES

Paper submission deadline: **1 March 2012**

Notification of acceptance: **1 May 2012**

Final papers due: **1 June 2012**

Tutorial proposals: **1 March 2012**

Workshop proposals: **1 January 2012**

Panel proposals: **1 May 2012**

EXECUTIVE COMMITTEE

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