IEEE/CIC INTERNATIONAL CONFERENCE ON COMMUNICATIONS IN CHINA

IEEE/CIC
ICCC15

2-4 November 2015, SHENZHEN, CHINA

FINAL PROGRAM

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IEEE

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中国通信学会
CHINA INSTITUTE OF COMMUNICATIONS

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IEEE/CIC ICCC Badges must be worn at all times and are necessary for admittance to all IEEE/CIC ICCC Sessions and Meal functions. (Tickets and Badges are needed for entry to the Workshops, Banquet and Workshop Lunches).

REGISTRATION DESK

Registration desk will be located in the hall of Venice Hotel Shenzhen.

MEETING ROOMS, POSTERS AND EXHIBITIONS

Meeting rooms and the Ballroom are located on the 1st floor and 3rd floor. Posters and exhibitions will be set up in the lounge of 1st floor (outside Ballroom).

WELCOME RECEPTION

Monday Nov. 2 18:30-21:00, Poolside on the 2nd floor.

CONFERENCE BANQUET

Tuesday Nov. 3 19:00-21:00, inside of Splendid China.

COFFEE BREAKS

Coffee breaks will be provided in the meeting room or foyers on the 1st floor and 3rd floor. Hours of Coffee Breaks: 10:30am-11:00am (Nov.2), 10:00 am-10:20 am (Nov. 3,4), 15:30pm-16:00pm(Nov. 2-4).

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 sessions in the conference. The conference speakers and audience thank you for your consideration and cooperation.

EVALUATION FORMS

All Conference Participants will receive an overall conference evaluation form through email after the conference. Your feedback is important to us and helps us plan future meetings.

IEEE/CIC ICCC 2015

Intelligent Communications for a Connected Cyberspace
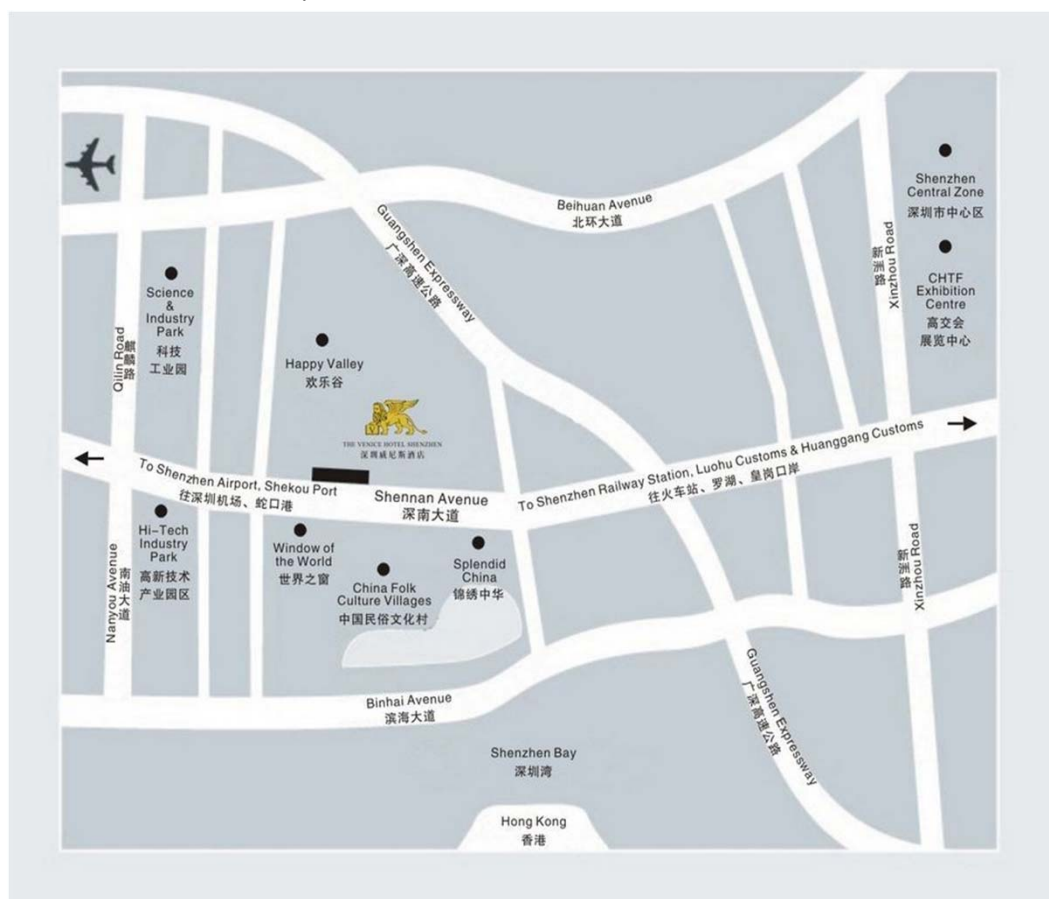
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Program-AT-A-Glance of IEEE/CIC ICCC'15 and Workshops, Shenzhen, China, 2-4 Nov. 2015

Monday, Nov. 2 2015

Time/Day					
08:00-08:30	Conference Registration (08:00-19:00 Hall)				
08:30-09:00					
09:00-09:45	AINIS Tivoli 3F	IoT Roma 1F	E-MIMO Milano 3F	GCST Firenze 3F	
09:45-10:30	Coffee Break (Foyer)				
10:30-11:00					
11:00-12:30	AINIS Tivoli 3F	IoT Roma 1F	E-MIMO Milano 3F	GCST Firenze 3F	
12:30-14:00	Lunch (Café Zentor 1F)				
14:00-15:30	Tutorial #1 Tivoli 3F	Tutorial #2 Parma 3F	Tutorial #3 Roma 1F	Tutorial #4 Milano 3F	IAP-1 Firenze 3F
15:30-16:00	Coffee Break (Foyer)				
16:00-17:30	Tutorial #5 Tivoli 3F	Tutorial #6 Parma 3F	Tutorial #7 Roma 1F		IAP-1 Firenze 3F
18:30-21:00	Reception (Poolside)				

Tuesday, Nov. 3 2015

Time/Day								
08:00-08:30	Welcome Opening Ceremony (Venice Ball Room, 1F)							
08:30-09:00	Keynote Speech #1: Disruptive Technologies for 5G – The Next Wireless Frontier, Prof. Khaled Ben Letaief, The Hong Kong University of Science and Technology, HK (Venice Ball Room, 1F)							
09:00-09:45	Keynote Speech #2: Challenges & Opportunities of Communications, Computing and Storage, Prof. Pingzhi Fan, Southwest Jiaotong University, China (Venice Ball Room, 1F)							
09:45-10:30	Coffee Break (Foyer)							
10:30-11:00	Plenary Speech #1: Location, Location, and Location! Prof. Moe Z. Win, Massachusetts Institute of Technology, US (Venice Ball Room, 1F)							
11:00-12:30	SPC-1 Ball Room-B 1F	WCS-1 Milano 3F	WCS-2 Parma 3F	CCT-1 Verona 3F	CCT-2 Torino 3F	NGN-1 Roma 1F	PSC-1 Tivoli 3F	STC-1 Firenze 3F
12:30-14:00	Poster Session: WCS-10 PSC-3 SPC-4 SNBD-3 NGN-3 Louge 1F	Lunch (Poolside 2F)						
14:00-15:30		WCS-3 Milano 3F	WCS4 Parma 3F	SNBD-1 Verona 3F	WNM-1 Torino 3F	Invited Talks #1 Roma 1F	IAP-2 Tivoli 3F	IAP-3 Firenze 3F
15:30-16:00	Coffee Break (Foyer)							
16:00-17:30		WCS-5 Milano 3F	OCSN-1 Parma 3F	WNM-2 Verona 3F	SPC-2 Torino 3F	NGN-2 Roma 1F	Steering Committee Meeting	IAP-3 Firenze 3F
18:30-21:00	Banquet (Splendid China)							

Wednesday, Nov. 4 2015

Time/Day								
08:00-08:30	Conference Registration (08:00-18:00 Hall)							
08:30-09:15	Keynote Speech #3: Optimal Joint Provision of Backhaul and Radio Access Networks, Prof. Zhiquan (Tom) Luo, University of Minnesota, Twin Cities, US (Venice Ball Room, 1F)							
09:15-10:00	Keynote Speech #4: TD-LTE Evolution and Future 5G Directions, Dr. Shanzhi Chen, Datang Telecom Technology & Industry Group, China (Venice Ball Room, 1F)							
10:00-10:20	Coffee Break (Foyer)							
10:20-11:00	Plenary Speech #2: Higher, denser, wilder: the road to 5G, Prof. Andreas F. Molisch, University of Southern California, US (Venice Ball Room, 1F)							
11:00-12:30	Invited Talks #2 Ballroom-A	CCT-4 Ball Room-B 1F	WCS-6 Milano 3F	WCS-7 Verona 3F	CCT-3 Torino 3F	Invited Talks #2 Roma 1F	STC-2 Tivoli 3F	Invited Talks #3 Firenze 3F
12:30-14:00	Lunch (Poolside 2F)							
14:00-15:30	Exhibition Louge 1F	WCS-8 Milano 3F	PSC-2 Verona 3F	SPC-3 Torino 3F	Invited Talks #4 Roma 1F			
15:30-16:00	Coffee Break (Foyer)							
16:00-17:30	Exhibition Louge 1F	WCS-9 Milano 3F	SNBD-2 Verona 3F	WNM-3 Torino 3F				

Plenary Speech 1: Moe Z. Win
Plenary Speech 2: Andreas F. Molisch

Workshops
AINIS: The first international workshop on The Advances in Industrial Networks and Intelligent Systems
IoT: 3rd IEEE ICCC International Workshop on Internet of Things
E-MIMO: Emerging MIMO Technologies with Large-scale Active Antenna System
GCST: Green and Secure Information Communication Technologies

Tutorials:
Tutorial 1: Modeling, Analysis and Optimization of 5G Wireless Communication Networks
Tutorial 2: Full-Duplex Communication and Networks
Tutorial 3: Super Resolution Imaging and Research Trends
Tutorial 4: Advanced Ad Hoc and Mesh Networks: From Theoretical to Practical
Tutorial 5: Economics of TV White Space Networks
Tutorial 6: Energy Harvesting Wireless Communications: Resource Management and Cross-Layer Design
Tutorial 7: Advanced Techniques Driving Mobile Communications Forward

Technical Sessions
STC: Selected Topics in Communications
CCT: Communication and Control Theory
OCSN: Optical Communication Systems and Networks
PSC: Privacy and Security in Communications
SNBD: Social Networks and Big Data
SPC: Signal Processing for Communications
WCS: Wireless Communications Systems
WNM: Wireless Networking and Multimedia
NGN: Next Generation Networking

Industrial & Academic Panels (IAP)
IAP-1: 5G technology in Japan & panel discussion, Fujitsu
IAP-2: Innovate Faster Workshop
IAP-3: Applications of IoT in Safety Monitoring of The South To North Water Diversion Project

IEEE/CIC ICCC 2015
Intelligent Communications for a Connected Cyberspace

MESSAGE FROM THE GENERAL CHAIRS

Xuemai Gu   Xinsheng Zhang

WELCOME MESSAGE FROM THE GENERAL CHAIRS

On behalf of the Executive Committee and the hosting Harbin Institute of Technology, it is our great pleasure to welcome you to the fourth IEEE/CIC International Conference on Communications in China (ICCC 2015). Since its commencement in 2012, the ICCC conference has grown steadily from a brand new conference with a strong vision, to a unique venue in bringing together global researchers and practitioners in areas of communications to the greater China region. In particular, this year's IEEE/CIC ICCC aims at addressing a key theme on "Intelligent Communications for a Connected Cyberspace", which broadly cover all disciplines of communications from fundamental research to emerging applications, while emphasizing society-shaping technologies in the modern IT era. In addition to providing a major forum for people to present their frontier research work and discuss the latest breakthroughs, the ICCC 2015 also features Keynotes, Plenary Speeches, Invited Talks, Tutorials, Industrial & Academic Panels, Exhibitions, and dedicated Workshops. For those who attend the IEEE/CIC ICCC for the first time, you will soon appreciate the fact that IEEE/CIC ICCC is more than just an outstanding technical conference, it is also a friendly rendezvous to interact, inspire, and discover.

This year we are honored to have four world renowned experts from academia and industry, Prof. Khaled Ben Letaief of The Hong Kong University of Science and Technology, Prof. Zhiquan (Tom) Luo of University of Minnesota, Twin Cties, Dr. Shanzhi Chen, Executive Vice President of Datang Telecom Technology & Industry Group, China, and Prof. Pingzhi Fan of Southwest Jiaotong University, China, to be our keynote speakers. In addition, we invited two distinguished scholars, Prof. Andreas F. Molisch of University of Southern California, and Prof. Moe Z. Win of Massachusetts Institute of Technology, for presenting two Plenary Speeches. Not only have each of them made extraordinary contributions to the fields of communications, their diverse expertise and keen visions in both academia and industry are equally remarkable. We look forward to their stimulating and scholastic seminars in IEEE/CIC ICCC 2015.

We would like to acknowledge the IEEE Communications Society (ComSoc) and the China Institute of Communications (CIC) for their great partnership in sponsoring the ICCC 2015. We feel deeply grateful to all the people that have contributed to make this event possible: the authors who contributed papers, the conference steering committee, the invited speakers, and the diligent reviewers. Special thanks go to the Gongjin Electronics, HUAWEI, Fujitsu, National Instruments, Datang, and Nanjing University of Posts & Telecommunications for their generous support. Kudos to the technical committee members for a remarkable job they have done in planning and organizing the meetings. Thanks are also extended to the conference administrative committee, the volunteers, supporters, and Venice Hotel Shenzhen, for their tirelessly efforts throughout the course of the conference.

Finally, we wish all the participants a very fruitful and productive conference, and also an unforgettable stay in Shenzhen.

General Chairs, IEEE/CIC ICCC 2015
Xuemai Gu, Professor, Dean of School of Electronic & Information Engineering, Harbin Institute of Technology
Xinsheng Zhang, VP & Secretary General, China Institute of Communications

MESSAGE FROM THE TECHNICAL PROGRAM CHAIRS

Qinyu Zhang   Yu Cheng   Guang Shi

MESSAGE FROM THE TECHNICAL PROGRAM CHAIRS

On behalf of the Technical Program Committee, it is our great pleasure to welcome you to the fourth IEEE/CIC International Conference on Communications in China (ICCC 2015), in the magnificent city of Shenzhen. Under the theme of "Intelligent Communications for a Connected Cyberspace," IEEE/CIC ICCC 2015 brings together researchers to discuss the latest advances in communications. The technical program of ICCC 2015 features 4 world-class keynote speeches, 2 distinguished plenary speeches, 9 technical symposia, 7 tutorials, 3 industrial and academic panels, and 4 workshops. In addition, we have 12 symposium invited talks delivered by 12 famous experts from academia and industry.

In this fourth edition of IEEE ComSoc's flagship conference in China, we have maintained the high quality of the conference. We received 461 paper submissions from about 30 countries and regions. Out of these, 180 papers were accepted, corresponding to an acceptance rate of 39.04%. All papers were carefully peer reviewed by more than 400 TPC members and reviewers, with each paper evaluated by at least three reviewers. Within these accepted papers, we also have 40 invited papers by established experts in their fields. All these papers and talks are organized into 33 lecture-style oral sessions and 1 interactive poster sessions.

We are confident that you will find the technical program of IEEE/CIC ICCC 2015 very stimulating and inspiring. We warmly invite all of you to join us in interacting with the keynote/plenary and invited speakers, and industrial panelists, and more importantly, interacting with all of your peer attendees. A technical program like this would not have been possible without the hard work and devotion of many of our organizing committee members and volunteers. We would like to especially thank the Symposium Chairs, Workshop Chairs, Tutorial Chairs, and Industrial and Academic Panel Chairs for their exceptional work. We would also like to express our sincere thanks to all the TPC members and reviewers for their help in the paper review process.

Finally, we wish to thank all authors and attendees for participating in the conference. We hope you will have a fruitful and memorable experience at IEEE/CIC ICCC 2015 in Shenzhen.

Technical Program Chairs, IEEE/CIC ICCC 2015
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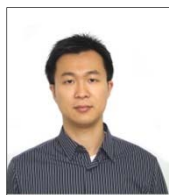China Institute of Communications

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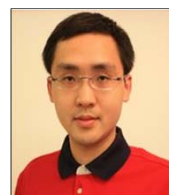Shengli Zhang
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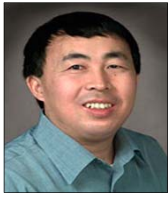
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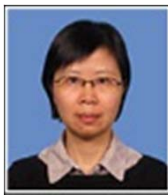
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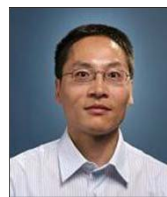
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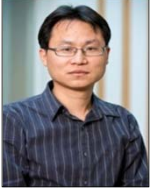
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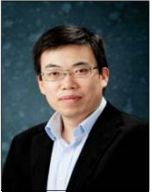
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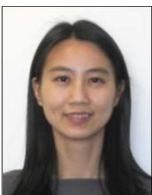
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Qiang Wu, Juniper Networks

Xin Wu, Big Switch Networks

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Yik-Chung Wu, The University of Hong Kong

Ming-Wei Wu, Zhejiang University of Science and Technology

Yik-Chung Wu, The University of Hong Kong

Dalei Wu, The University of Tennessee at Chattanooga

Keyu Wu, University of Alberta

Xin Wu, Big Switch Networks

OPENING CEREMONY

November 3, Tuesday, 08:00-08:30, Venice Ballroom
Chair: Prof. Qinyu Zhang

General Chair Xuemai Gu, Professor, Harbin Institute of Technology	General Chair Xinsheng Zhang, VP & Secretary China Institute of Communications	TPC Chair Qinyu Zhang, Professor, Harbin Institute of Technology	TPC Chair Yu Cheng, Associate Professor, Illinois Institute of Technology	TPC Chair Guang Shi, Director of Dept. Academy, China Institute of Communications

1. Welcome Message From Prof. Xuemai Gu
2. Welcome Message From Prof. Yu Cheng

KEYNOTE #1
Chair: Guang Shi, China Institute of Communications

Dr. Khaled B. Letaief
Chair Professor and Dean
School of Engineering
The Hong Kong University of Science and Technology
Date: November 3, Tuesday
Time: 08:30-09:15
Room: Venice Ballroom

Disruptive Technologies for 5G – The Next Wireless Frontier

Abstract: We are witnessing an exciting time for future wireless networks with the emergence of 5G. In contrast to 3G and 4G, which were mainly a continuation of their predecessors, 5G will represent a revolutionary leap and will have a huge impact on the transformation of wireless communications industries as well as vertical industries. In this talk, we will describe the vision and opportunities of 5G mobile and wireless networks. We will describe the key challenges and requirements such as uniform Gbps experience, reduced latency for delay sensitive services, and massive connectivity. We also describe some of the important technologies ranging from air technologies and network design to services that are needed to meet the demands of beyond 4G wireless networks and guarantee broadband ubiquitous communications of all things, including human-to-machine and machine-to-machine, for a connected living. The ongoing R&D and standardization activities such as METIS and IMT-2020 will also be introduced.

Biography: Dr. Letaief received his Ph.D. in Electrical Engineering from Purdue University in 1990. From 1990 to 1993, he was a faculty member at the University of Melbourne, Australia. Since 1993, he has been with HKUST where he has held numerous administrative positions, including Dean of HKUST School of Engineering, Head of the Electronic and Computer Engineering department, Director of the Center for Wireless IC Design, Director of Huawei Innovation Laboratory, and Director of the Hong Kong Telecom Institute of Information Technology. From September 2015, he joined HBKU as Provost to help establish a research-intensive university in Qatar in partnership with strategic partners that include Northwestern, Carnegie Mellon, Cornell, and Texas A&M. Dr. Letaief is an internationally recognized leader in wireless communications and networks. He served as consultants for different organizations including Huawei, ASTRI, ZTE, Nortel, PricewaterhouseCoopers, and Motorola. He is the founding Editor-in-Chief of the IEEE Transactions on Wireless Communications and has served on the editorial board of other prestigious journals including the IEEE Journal on Selected Areas in Communications – Wireless Series (as Editor-in-Chief).

Dr. Pingzhi Fan
Professor, Vice President of Southwest Jiaotong University
Date: November 3, Wednesday
Time: 09:15-10:00
Room: Venice Ballroom

Challenges & Opportunities of Communications, Computing and Storage

Abstract: In this talk, information systems consisting of communications, computing and storage subsystems are considered. In the past, the three subsystems were independently progressed, and each of them has reached a stage of certain limit. In computing, Moore's Law may run out of steam soon based on silicon technology; in communications, the Shannon's classical capacity limit has almost reached; in storage, although the optical disks and magneto-optical disks have developed very fast, it seems still a way to meet the rapid increase of big data. To cope with the impact of big data, it is proposed to integrate the traditionally individual computing, communications and storage subsystems, which are getting inevitably converged. An effective information system capacity is introduced and discussed, aimed at excavating potentials of information systems under a new paradigm with more degrees of freedom. In this talk, the convergence of computing, telecommunications and storage is investigated, and the effectiveness of data handling capability for a given information system is discussed.

Biography: Pingzhi Fan (IEEE Fellow) received his PhD degree in Electronic Engineering from the Hull University, UK. He is currently a professor and director of the institute of mobile communications, Southwest Jiaotong University, China. He is a recipient of the UK ORS Award, the Outstanding Young Scientist Award by NSFC, and the chief scientist of a national 973 program. He served as general chair or TPC chair of a number of international conferences, and is the guest editor-in-chief, guest editor or editorial member of several international journals. He is the founding chair of IEEE VTS BJ Chapter, founding chair of IEEE Chengdu Section. He also served as a board member of IEEE Region 10, IET(IEE) Council and IET Asia-Pacific Region. He has over 200 research papers published in various academic English journals (IEEE/IEE/IEICE, etc), and 8 books (incl. edited) published by John Wiley & Sons Ltd/RSP (1996), IEEE Press (2011, etc), Springer (2004) and Nova Science (2007), and is the inventor of 20 granted PCT and Chinese patents. His research interests include high mobility wireless communications, 5G techniques, convergence of telecommunications, computing and storage, signal design & coding, etc. He is an IEEE VTS Distinguished Lecturer (2015-2017), a fellow of IEEE, IET(IEE), CIE and CIC.

Dr. Zhiquan (Tom) Luo
Professor and ADC Chair in Digital Technology
Department of Electrical and Computer Engineering
University of Minnesota, Twin Cites
Date: November 4, Tuesday
Time: 08:30-09:15
Room: Venice Ballroom

Optimal Joint Provision of Backhaul and Radio Access Networks

Abstract: We consider a cloud-based heterogeneous network of base stations (BSs) connected via a backhaul network of routers and wired/wireless links with limited capacity. The optimal provision of such networks requires proper resource allocation across the radio access links in conjunction with appropriate traffic engineering within the backhaul network. In this work we propose an efficient algorithm for joint resource allocation across the wireless links and the flow control over the entire network, taking into account the buffer size, half-duplex and interference constraints. The proposed algorithm, which maximizes the min-rate among all the transmitted commodities, is based on a decomposition approach that leverages both the asynchronous Alternating Direction Method of Multipliers (ADMM) and the weighted-MMSE (WMMSE) algorithm. We show that this algorithm is easily parallelizable and converges globally to a stationary solution of the joint optimization problem. The proposed algorithm can also be extended to networks with multi-antenna nodes and other utility functions.

Biography: Zhi-Quan (Tom) Luo received his B.Sc. degree in Applied Mathematics in 1984 from Peking University, Beijing, China. Subsequently, he was selected by a joint committee of the American Mathematical Society and the Society of Industrial and Applied Mathematics to pursue Ph.D study in the United States. After an one-year intensive training in mathematics and English at the Nankai Institute of Mathematics, Tianjin, China, he studied in the Operations Research Center and the Department of Electrical Engineering and Computer Science at MIT, where he received a Ph.D degree in Operations Research in 1989. From 1989 to 2003, Dr. Luo held a faculty position with the Department of Electrical and Computer Engineering, McMaster University, Hamilton, Canada, where he eventually became the department head and held a Canada Research Chair in Information Processing. Since April of 2003, he has been with the Department of Electrical and Computer Engineering at the University of Minnesota (Twin Cities) as a full professor. His research interests lies in the union of optimization algorithms, signal processing and digital communication. Currently, he is with the Chinese University of Hong Kong, Shenzhen, where he is a Professor and serves as the Vice President Academic. Dr. Luo is a fellow of IEEE and SIAM. He is a recipient of the 2004 and 2009 IEEE Signal Processing Society's Best Paper Awards, the 2011 EURASIP Best Paper Award and the 2011 ICC Best Paper Award. He was awarded the 2010 Farkas Prize from the INFRMS Optimization Society. Dr. Luo chaired the IEEE Signal Processing Society Technical Committee on the Signal Processing for Communications (SPCOM) from 2011-2012. He has held editorial positions for several international journals including Journal of Optimization Theory and Applications, SIAM Journal on Optimization, Mathematics of Computation and IEEE Transactions on Signal Processing. He is the current Editor-in-Chief for the journal IEEE Trans. Signal Processing. In 2014 he is elected to the Royal Society of Canada.

Dr. Shanzhi Chen
Executive Vice President of Datang Telecom Technology & Industry Group
Director of State Key Laboratory of Wireless Mobile Communications
Date: November 4, Wednesday
Time: 09:15-10:00
Room: Venice Ballroom

TD-LTE Evolution and Future 5G Directions

Abstract: TD-LTE has been regarded as an important milestone for the Chinese telecommunication industry in the 4G era, and it has received considerable attention around the world and has shown astonishingly fast development in recent years. This presentation presents TD-LTE and its evolution, including key technologies, standardization progress, industry achievement and also TDD+ evolution. Furthermore, in order to meet the requirement of the information society in 2020 and beyond, a new generation (5G) mobile broadband system is promoted. After presenting an overview of 5G including scenarios, KPIs and technology routes, this presentation pays attention to TDD's role in 5G and finally presents a series of TDD priority technologies, such as massive MIMO, ultra dense network, high frequency band, flexible spectrum sharing and also Pattern Division Multiple Access (PDMA).

Biography: Shanzhi CHEN received his Ph.D. degree from Beijing University of Posts and Telecommunications (BUPT), China, in 1997. He got M.S. (1991) from China Academy of Posts and Telecommunications (CAPT), and B.E. (1987) from Xidian University, China. He is currently the Chief Technology Officer (CTO) of Datang Telecom Technology & Industry Group and China Academy of Telecommunication Technology (CATT). He is also the director of State Key Laboratory of Wireless Mobile Communications, and the board member of Semiconductor Manufacturing International Corporation (SMIC). He is a Guest Professor of BUPT and Beijing Institute of Technology (BIT). Dr. CHEN has more than 20 years of experience in broadband communication and wireless mobile communication, both in industry and academia. He was a visiting researcher at the Alcatel Bell research Center in Antwerp, Belgium in 1996. He joined Datang Telecom Technology & Industry Group in 1994, and has been serving as CTO since 2008. He devoted his researches and developments to TD-SCDMA 3G and TD-LTE-advanced 4G since 2004. He has authored/co-authored over 100 technical papers in journals and conference proceedings, and 20 invention patents. Dr. CHEN received the State Science and Technology Progress Award of China in 2001 and 2012 respectively, GuangHua Engineering Science and Technology Award from the Chinese Academy of Engineering in 2012, and Outstanding Young Researcher Award from Nature Science Foundation of China in 2014. Dr. Chen is a Fellow of the China Institute of Electronics (CIE), a Fellow of the China Institute of Communications (CIC), and a Senior Member of the IEEE. He is the Editor of the IEEE Network and the IEEE Internet of Things Journal, the Guest Editor of the IEEE Wireless Communications Magazine and the IEEE Communications Magazine. He is also the Editor of the China Communications and the Journal of Communication. He was a member of the steering expert group on information technology of the 863 Hi-Tech R&D Plan of China from 1999 to 2011. His current research interests include network architectures, 5G wireless mobile communications, Internet of Things (IoT) and vehicular network.

PLENARY SPEECH #1
Chair: Prof. Qinyu Zhang, Harbin Institute of Technology

Prof. Moe Z. Win
Laboratory for Information and Decision Systems
Massachusetts Institute of Technology
Date: November 3, Tuesday
Time: 10:20-11:00
Room: Venice Ballroom

LOCATION, LOCATION, AND LOCATION !

Abstract: The availability of positional information is of extreme importance in numerous wireless applications. The coming years will see the emergence of location-aware networks with sub-meter localization accuracy, minimal infrastructure, and robustness in harsh (GPS challenged) environments. To reach this goal we advocate network localization and navigation, a new paradigm that exploits a combination of wideband transmission and spatiotemporal cooperation. Our work has addressed this problem from three perspectives: theoretical framework, cooperative algorithms, and network experimentation. We will give an overview of our recent research results in this exciting field.

Biography: Moe Win is a Professor at the Massachusetts Institute of Technology (MIT). Prior to joining MIT, he was with AT&T Research Laboratories for five years and with the Jet Propulsion Laboratory for seven years. His research encompasses fundamental theories, algorithm design, and experimentation for a broad range of real-world problems. His current research topics include network localization and navigation, network interference exploitation, intrinsic wireless network secrecy, adaptive diversity techniques, and ultra-wideband systems. Professor Win is a Fellow of the AAAS, the IEEE, and the IET, and served as an IEEE Distinguished Lecturer. He is an elected Member-at-Large on the IEEE Communications Society Board of Governors (2011−2013). He was the Chair (2004−2006) and Secretary (2002−2004) for the Radio Communications Committee of the IEEE Communications Society. He was honored with two IEEE Technical Field Awards: the IEEE Kiyo Tomiyasu Award and the IEEE Eric E. Sumner Award (jointly with Professor R. A. Scholtz). He received the International Prize for Communications Cristoforo Colombo, the Copernicus Fellowship, the Royal Academy of Engineering Distinguished Visiting Fellowship, the Fulbright Fellowship, the Laurea Honoris Causa from the University of Ferrara, and the U.S. Presidential Early Career Award for Scientists and Engineers.

Prof. Andreas F. Molisch
University of Southern California
Date: November 4, Wednesday
Time: 10:20-11:00
Room: Venice Ballroom

Higher, denser, wilder: the road to 5G

Abstract: 5G will be a system that truly builds on the legacy of 4G, but contains a number of additional, innovative, components that will allow to handle the required orders-of-magnitude increase in throughput and data rate. This presentation will discuss three of those components: (i) the move to higher frequencies, namely the mm-wave band, (ii) the densification of simultaneously served users in a cell through the use of massive MIMO, and (iii) the emergence of device-to-device communications as an additional way to communicate in an increasingly heterogeneous network. I will describe the fundamentals of each of these approaches, as well as the main technical challenges both from a theoretical and an implementation perspective. I will also describe the interaction between them - for example, massive MIMO will first be introduced at mm-wave frequencies because it is essential there to achieve sufficient range. A discussion of the standardization of these fundamental technologies will round off the talk.

Biography: Andreas F. Molisch received the Dipl. Ing., Ph.D., and habilitation degrees from the Technical University of Vienna, Vienna, Austria, in 1990, 1994, and 1999, respectively. From 2000-2002 he was with AT&T (Bell) Laboratories Research (USA), and from 2002-2008 with Mitsubishi Electric Research Labs (USA), most recently as Chief Wireless Standards Architect. Concurrently, he was Professor and Chairholder for Radio Systems at Lund University, Lund, Sweden. Since 2009, he is Professor of Electrical Engineering and Head of the Wireless Devices and Systems (WiDeS) group at the University of Southern California (USC), Los Angeles, USA, and since 2011 also the Director of the Communication Sciences Institute at USC. His current research interests are the measurement and modeling of mobile radio channels, ultra-wideband communications and localization, cooperative communications, multiple-input–multiple-output systems, wireless systems for healthcare, and novel cellular architectures. He has authored, coauthored, or edited four books (among them the textbook Wireless Communications, Wiley-IEEE Press; Chinese translation published by PHEI), 18 book chapters, some 180 journal papers, 260 conference papers; which have been widely cited. He also has more than 80 patents and 70 standards contributions, many of which have found their way into widely used products as well as the LTE and 802.11 standards. Dr. Molisch has been an Editor of a number of journals and special issues, General Chair, Technical Program Committee Chair, or Symposium Chair of multiple international conferences, as well as Chairman of various international standardization groups. He has received numerous awards, among them the Donald Fink Prize of the IEEE, and the Eric Sumner Award of the IEEE (the Technical Field Award for communications of the IEEE). He is a Fellow of the IEEE, Fellow of the AAAS (American Association for the Advancement of Science), Fellow of the IET (Institute of Engineering and Technology), an IEEE Distinguished Lecturer, and a member of the Austrian Academy of Sciences.

INVITED TALKS

Session-1
Date: November 3, Tuesday
Time: 14:00-15:30
Room: Tivoli, 3F
Chair:
1. Speaker: **Prof. Qian Zhang**, The Hongkong University of Science & Technology, Hongkong
   Efficient Design for Extremely Dense Wireless Networks
2. Speaker: **Prof. Yuan Shen**, Tsinghua University, China
   Resource Optimization for Wireless Network Localization
3. Speaker: **Prof. Xiaohu Ge**, Huazhong University of Science & Technology, China
   5G ultra-dense cellular networks

Session-2
Date: November 4, Wednesday
Time: 11:00-12:30
Room: Ballroom-A, 1F
Chair:
1. Speaker: **Prof. Huiming Wang**, Xi[1]an Jiao Tong University, China
   Cooperative physical layer security for wireless communications: secrecy schemes and signal design
2. Speaker: **Prof. Mugen Peng**, Beijing University of Posts & Telecommunications, China
   Recent Advances in the Edge Cloud Computing based Radio Access Networks
3. Speaker: **Prof. Vincent Lau**, The Hongkong University of Science & Technology, Hongkong
   MIMO Precoding for Networked MIMO Control Systems with Energy Harvesting Sensors

Session-3
Date: November 4, Wednesday
Time: 11:00-12::30
Room: Firenze, 3F
Chair:
1. Speaker: **Prof. Vincent Lau**, The Hongkong University of Science & Technology, Hongkong
   MIMO Networked Control with Energy Harvesting Sensors
2. Speaker: **Prof. Kaibin Huang**, The University of Hongkong
   Wirelessly Powered Communications: From Theory to Practice
3. Speaker: **Prof. Chee Wei Tan**, City University of Hongkong
   Wireless Network Optimization By Perron-Frobenius Theory

Session-4
Date: November 4, Wednesday
Time: 14:00-15:30
Room: Roma, 1F
Chair:
1. Speaker: **Prof. Xinyi Huang**, Fujian Normal University, China
   Further Observations on Password-based Authentication
2. Speaker: **Prof. Jian Weng**, Beijing University of Posts & Telecommunications, China
   Verifiable Cloud Computing
3. Speaker: **Dr. Lu Lu**, The Chinese University of Hongkong
   Putting Physical-Layer Network Coding in Practice

Note:

WORKSHOPS

Session-1 (Session Chair:) 09:00-10:30

1. *Welcome Opening Speech:* General Co-Chairs/TPC Co- Chairs of Workshop on E-MIMO
2. *Multi-Cell MMSE Precoding in Distributed Antenna System with Pilot Contamination*, **Chiyang Xiao, Xin Su, Jie Zeng, Liping Rong, Xibin Xu**, Tsinghua University, Beijing, China
3. *A Codebook Design Approach for Massive MIMO with Planar Antenna Array*, **Shaohui Sun[1,2], Qiubin Gao[2], Runhua Chen[2], Wenhong Chen[2], Hui Li[2], Rakesh Tamrakar[2]**, 1. Peking University, Beijing, China, 2. State Key Laboratory of Wireless Mobile Communications (CATT), Beijing, China
4. *Hybrid Precoder for Massive MIMO Systems with Coverage Constraint*, **Lingxiao Kong, Shengqian Han, Chenyang Yang**, Beihang University, Beijing, China
5. *Reference Signal Design for Demodulation of Higher Order MU-MIMO in 3D-MIMO Systems*, **Yuhong Huang, Lijie Hu, Hui Tong, Fei Wang, Jing Jin, Guangyi Liu, Qixing Wang**, China Mobile Research Institute, Beijing, China

Session-2 (Session Chair:) 11:00-12:30

1. *Antenna Calibration Method for MMSE-based Network MIMO System*, **Qiang Liu[1], Xin Su[2], Jie Zeng[2], Lili Liu[2] Tiejun Lv[1]**, 1. Beijing University of Posts and Telecommunications, Beijing, China, 2. Tsinghua University, Beijing, China
2. *A System Level Evaluation of Vertical Sectorization for Active Antenna System*, **Fangchao Zhang[1], Shaohui Sun[1,2], Qiubin Gao[2], Runhua Chen[2], Hui Li[2], Rakesh Tamrakar[2], Wenhong Chen[2]**, 1. Beihang University, Beijing, China, 2. State Key Laboratory of Wireless Mobile Communications (CATT), Beijing, China
3. *ICD Reciprocity Calibration for Distributed Large-Scale MIMO Systems with BD Precoding*, **Hao Wei, Dongming Wang, Xiaohu You**, Southeast University, China
4. *MF-SIC Detector for Massive MIMO with QPSK Modulation*, **Fangwei Dong[1], Yue Xiao[1,2], Lixia Xiao[1], Xia Lei[1], Shaoqian Li[1], Wen Xiaojie[3]**, 1. University of Electronic Science and Technology of China, Chengdu, China, 2. Southeast University, China, 3. Space Star Technology Co., Ltd.

Session-1 (Session Chair:) 09:00-10:30

Welcome Opening & Keynote Speech: **Prof. Michael Pichet**, Chair Professor in Mechanical Engineering and Professor in Applied Mathematics, University of Maryland

1. *An Unequal Clustering Routing Protocol for Energy-Heterogeneous Wireless Sensor Networks*, **Na Bao, Guangjie Han, Li Liu, Xu Jiang** (Hohai University, P.R. China); **Lei Shu** (Guangdong University of Petrochemical Technology, P.R. China)
2. *Angle Fingerprint: A Database-Driven Method for Indoor Localization*, **Ze Zheng** , **Guoru Ding**, and **Yang Yang** (PLA University of Science and Technology, China)
3. *Multi-object Tracking Method Based on Super-pixel and Energy Minimization*, **Wang Liu, Mingya Zhang, Wei Chen** (China University of Mining and Technology); **Wenxiang Li, Yuxia Sheng** (Wuhan University of Science and Technology,China)

Session-2 (Session Chair:) 11:00-12:30

1. *Multi Secrecy Analysis for Forward Link Multi-user Massive MIMO System with MRT Precoding*, **Bin Chen** (National University of Defense Technology, P.R. China); **Chunsheng Zhu** (The University of British Columbia, Canada); Wei Chen (China University of Mining and Technology, China); **Kun Wang** (Nanjing University of Posts and Telecommunications, P.R. China); **Jibo Wei** (National University of Defense Technology, P.R. China)
2. *A Context-aware Data Processing Model in Power Communication Networks*, **Yunfei Guo** (Smart Grid Research Institute, P.R. China); **Kun Wang** (Nanjing University of Posts and Telecommunications, P.R. China); **Shidong Liu, Jinghong Guo** (State Grid Smart Grid Research Institute, P.R. China); **Heng Lu** (Nanjing University of Posts and Telecommunications, P.R. China)
3. *Advanced A-law Employing Nonlinear Distortion Reduction in DCO-OFDM Systems*, **Xiaojing Zhang, Peng Liu** (North China Electric Power University, P.R. China); **Jiang Liu** (Waseda University, Japan); **Song Liu** (North China Electric Power University & Waseda University, P.R. China)
4. *A WSN based System for CO_2 Concentration Monitoring in Large-scale Petrochemical Plants*, Feng Zhang, Lei Shu, Chunsheng Zhu (The University of British Columbia, Canada); Xianjun Wu, Kailiang Li, Junlin Zeng, Meijie Zhu (Guangdong University of Petrochemical Technology, P.R. China); Guangjie Han (Hohai University, P.R. China); Haobo Li (China University of Geosciences, P.R. China); Mingxiang Zhang (GDUPT, P.R. China)

IEEE/CIC ICCC 2015
Intelligent Communications for a Connected Cyberspace

Session-1 (Communications and Security, Session Chair: Fei Pan) 09:00-10:30
1. *Welcome Opening Speech: :* General Co-Chairs/TPC Co- Chairs of Workshop on GSCT
2. *Variable step-size affine projection normalized subband adaptive filter design*, **Xiaohui Qi; Kaizhi Huang; Jing Yang**
3. *User Privacy Protection for Cloud Computing based Smart Grid*, **Yuanpeng Xie; Runfa Liao; Yixin Jiang; Hong Wen**
4. *Novel IGC Codes with Inter-Subset Zero-Correlation Zone for Code Division Multiple Access*, **Longye Wang; Xiaoli Zeng; Fei Pan; Yongfeng Li; Lin Hu**
5. *A Hierarchical Key Management System Applied in Cloud-based Smart Grid*, **Yuanpeng Xie; Runfa Liao; Yixin Jiang; Hong Wen**

Session-2 (Physical layer security for WSNs, Session Chair: Kaizhi Huang) 11:00-12:30
1. *5G Security Architecture and Light Weight Security Authentication*, **Fei Pan; Hong Wen; Huan-huan Song; Tang Jie; Longye Wang**
2. *A physical-layer Authentication Scheme Based on Hash Method*, **Jing Yang; Xinsheng Ji; Kaizhi Huang; Yajun Chen; Xiaohui Qi**
3. *Combining MIMO Beamforming with Security Codes to Achieve Unconditional Communication Security*, **Tang Jie; Hong Wen; Huan-huan Song; Fei Pan**
4. *An OFDM cross-layer encryption secure communication scheme*, **Fei Pan; Huan-huan Song; Hong Wen**

Session-1 (Session Chair: Prof. Qinghe Du, Xi'an Jiaotong University) 09:00-09:45
   Welcome Opening Speech & Keynote: General Co-Chairs/TPC, Prof. Zili Shao, The Hong Kong Polytechnic University

Session-2 (Session Chair: Prof. Xiaohan Liu, Chinese Academy of Sciences) 09:45-10:30
1. *Characterization of the On-Body RSSI Considering Different Propagation Environments,* **Ren Aifeng** (Xidian University, P.R. China); **Cao Dongjian** (Xidian University, P.R. China); **Fu Zhou** (Xidian University, P.R. China); **Tianqiao Zhu** (Xidian University, P.R. China); **Fangming Hu** (Xidian University, P.R. China); **Zhiya Zhang** (Xidian University, P.R. China); **Xiaodong Yang** (Xidian University, P.R. China); **Masood Ur Rehman** (University of Bedfordshire, United Kingdom); **Wei Zhao** (Xidian University, P.R. China); **Qammer Hussain Abbasi** (Texas A & M University, Qatar)
2. *Incident Localization and Assistance System: A Case Study of a Cyber-Physical Human System,* **Constantin Scheuermann** (Technische Universität München & T-Systems, Germany); **Bernd Bruegge** (Technische Universität München, Germany); **Jens Folmer** (Technische Universität München, Germany); **Stephan Verclas** (T-Systems International GmbH, Germany)
3. *Internet of Things for Wildlife Monitoring,* **Xiaohan Liu** (Chinese Academy of Sciences, P.R. China); **Tao Yang** (Computer Network Information Center, Chinese Academy of Sciences, P.R. China); **Baoping Yan** (Computer Network Information Center, P.R. China)

Session-3 (Session Chair: Prof. Chao Zhang, Xi'an Jiantong University) 11:00-12:30
1. *Energy-Efficient Radio Resource Management in a HetNet Downlink System with JT CoMP,* **Jia Yu** (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); **Guanghui Yu** (ZTE Corporation, P.R. China); **Ye Wang** (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); **Meng Sun** (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); **Qinyu Zhang** (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China)
2. *A Low-Complexity 3D MU-MIMO Downlink Scheme based on Two-step Precoding,* **Jie Li** (Xi'An Jiaotong University, P.R. China); **Guomei Zhang** (Xi'an Jiaotong University, P.R. China); **Gangming Lyu** (Xi'an Jiaotong University, P.R. China); **Fei Xiang** (R&D Center of ZTE Corporation, P.R. China)
3. *Joint Power and Subcarrier Allocation Using Auction Games for Secure Multiuser OFDMA Networks*, **Xiaojing Yan** (Beijing University of Posts and Telecommunications, P.R. China); **Li Jiang** (Beijing University of Posts and Telecommunications, P.R. China); **Hui Tian** (Beijng university of posts and telecommunications, P.R. China)
4. *Wireless-Powered Relay-aided Networks with Co-Channel Interference*, **Yawei Chen** (Xi'an Jiaotong University, P.R. China); **Chao Zhang** (Xi'an Jiaotong University, P.R. China)
5. *Hybrid localization algorithm based on APIT and DV-HOP in Wireless Sensor Networks*, **Liu Song Lin** (Harbin Institute of Technology, P.R. China)
6. *An Insight into Cloud-enabled Complex Industrial Applications,* **Zhaogang Shu** (College of Computer and Information, Fujian Agriculture and Forestry University, P.R. China); **Jiafu Wan** (South China University of Technology, P.R. China)

TUTORIALS

Tutorial-1: Modeling, Analysis and Optimization of 5G Wireless Communication Networks
Time: 14:00-15:30, Nov. 2, Monday
Room: Tivoli, 3F

Instructor(s): Marco Di Renzo (Paris-Saclay University), Cheng-Xiang Wang (Heriot-Watt University)

Abstract: The fifth-generation (5G) is coming. Quo vadis 5G? What architectures, network topologies and technologies will define 5G? Are methodologies to the analysis, design and optimization of current cellular networks still applicable to 5G? The proposed tutorial is intended to offer a comprehensive and in depth crash course to communication professionals and academics. It is aimed to critically illustrate and discuss essential and enabling transmission technologies, communication protocols and architectures that are expected to make 5G wireless communication networks a reality. More specifically, the present tutorial is focused on illustrating the critical and essential importance of channel and spatial models for an accurate system-level analysis and optimization of 5G networks, which are expected to use different frequency bands compared to state-of-the-art networks and to rely on a much denser deployment of access points and antenna-elements, to a scale that has never been observed in the past.

Biography of the instructors:

Marco Di Renzo (S'05–AM'07–M'09–SM'14) was born in L'Aquila, Italy, in 1978. He received the Laurea (cum laude) and the Ph.D. degrees in Electrical and Information Engineering from the Department of Electrical and Information Engineering, University of L'Aquila, Italy, in April 2003 and in January 2007, respectively. In October 2013, he received the Habilitation à Diriger des Recherches (HDR) from the University Paris-Sud XI, Paris, France. Since January 2010, he has been a Tenured Associate Professor ("Chargé de Recherche Titulaire CNRS") with Paris-Saclay University in the Laboratory of Signals and Systems (L2S), a joint academic and research laboratory of CNRS, CentraleSupelec and University Paris-Sud XI, Paris, France. His main research interests are in the field of wireless communications theory. He is a Principal Investigator of six European-funded research projects (Marie Curie ITN-GREENET, Marie Curie IAPP-WSN4QoL, Marie Curie ITN-CROSSFIRE, Marie Curie IAPP-SmartNRG, Marie Curie ITN-5Gwireless and Marie Curie RISE-CASPER). He is a co-founder and the Chief Scientific Officer for Wireless Communications Research of the university spinoff company WEST Aquila s.r.l.. From August 2002 to January 2008, he was with the Center of Excellence for Research DEWS, University of L'Aquila, Italy. In the fall of 2006, he was a Visiting Scholar in the Bradley Department of Electrical and Computer Engineering, Virginia Tech, USA. From February 2008 to April 2009, he was a tenured Research Associate with the Telecommunications Technological Center of Catalonia (CTTC), Spain. From May 2009 to December 2009, he was an EPSRC Research Fellow with the Institute for Digital Communications (IDCOM), The University of Edinburgh, United Kingdom. Dr. Di Renzo is the

Recipient of a special mention for the outstanding five-year (1997-2003) academic career, University of L'Aquila, Italy; the THALES Communications fellowship (2003-2006), University of L'Aquila, Italy; the 2004 Best Spin-Off Company Award, Abruzzo Province, Italy; the 2008 Torres Quevedo Award, Ministry of Science and Innovation, Spain; the "Dérogation pour l'Encadrement de Thèse" (2010), University of Paris-Sud XI, France; the 2012 IEEE CAMAD Best Paper Award; the 2012 IEEE WIRELESS COMMUNICATIONS LETTERS Exemplary Reviewer Certificate; the 2013 IEEE VTC-Fall Best Student Paper Award; the 2013 Network of Excellence NEWCOM# Best Paper Award; the 2013 IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY Top Reviewer Award; the 2013 IEEE-COMSOC Best Young Researcher Award for Europe, Middle East and Africa (EMEA Region); the 2014 Royal Academy of Engineering Distinguished Visiting Fellowship, United Kingdom; the 2014 IEEE ATC Best Paper Award; the 2014 IEEE CAMAD Best Demo Award; the 2014 IEEE CAMAD Best Paper Award; and the 2014 IEEE WIRELESS COMMUNICATIONS LETTERS Exemplary Reviewer Certificate. Currently, he serves as an Editor of the IEEE COMMUNICATIONS LETTERS and of the IEEE TCOM (Heterogeneous Networks Modeling and Analysis). He is a Senior Member of the IEEE and COMSOC, a Member of the European Association for Communications and Networking (EURACON), and an Member of Faculty Row - America's Top Professors.

Cheng-Xiang Wang received the BSc and MEng degrees in Communication and Information Systems from Shandong University, China, in 1997 and 2000, respectively, and the PhD degree in Wireless Communications from Aalborg University, Denmark, in 2004. He has been with Heriot-Watt University, Edinburgh, UK since 2005, and became a Professor in Wireless Communications in 2011. He is also an Honorary Fellow of the University of Edinburgh, UK, and a Chair/Guest Professor of Shandong University and Southeast University, China. He was a Research Fellow at the University of Agder, Grimstad, Norway, from 2001-2005, a Visiting Researcher at Siemens AG-Mobile Phones, Munich, Germany, in 2004, and a Research Assistant at Technical University of Hamburg-Harburg, Hamburg, Germany, from 2000-2001. He has edited 1 book and published 1 book chapter, about 100 journal papers, and over 110 conference papers. Prof. Wang has served as an editor for 8 international journals, including the IEEE TVT (since 2011) and the IEEE TWireless (2007-2009). He was the lead Guest Editor for the IEEE JSAC Special Issue on Vehicular Communications and Networks and a Guest Editor for the IEEE JSAC Special Issue on Spectrum and Energy Efficient Design of Wireless Communication Networks. He has served as a TPC Member, TPC Chair, and General Chair for more than 70 international conferences. He received several awards, including Best Paper Awards from IEEE Globecom 2010, IEEE 2011, IEEE ITST 2012, and IEEE VTC 2013-Fall, as well as the Graphical System Design Achievement Award (RF and Communications) for "Wireless Testbed Solution for Novel Future Generation Communication Systems" by the National

Instruments. He gave invited keynote speeches at 5 conferences and workshops and numerous invited talks. He is a Fellow of the IET, a Senior Member of the IEEE, a Fellow of the HEA, and a member of the EPSRC Peer Review College.

Tutorial-2: Full-Duplex Communication and Networks
## Time: 14:00-15:30, Nov. 2, Monday
Room: Parma, 3F

Instructor(s): Lingyang Song (Peking University), Yonghui Li (The University of Sydney)

Abstract: Almost all currently deployed radios for wireless communications are half-duplex which transmit and receive signals in two separate/orthogonal channels. With the recent development of full duplex (FD)communication, where a mobile node can send and receive at both the same time and the same frequency band, another avenue has opened up for increasing the capacity twice as high spectral efficiency as a half-duplex radio. Possible applications of FD radios include wireless base stations, wireless relays and personal-area wireless devices. The tutorial will provide a systematic overview of the foundations and recent developments of this promising FD technology, in particular from physical-layer signal processing, radio resources utilization point of view, possible applications, and summarizes the current state of the art of the theory, key strategies and techniques. There are three aspects for this tutorial. First, we provide literature for the current state of art for the FD hardware in Physical layer. Then, we illustrate how such FD paradigm will affect the design of other layers. Finally, we study how this will change the perspectives of different networks such as femtocell networks, cognitive radio networks, D2D networks.

Biography of the instructors:

Lingyang Song (S'03–M'06–SM'12) received his PhD from the University of York, UK, in 2007, where he received the K. M. Stott Prize for excellent research. He worked as a postdoctoral research fellow at the University of Oslo, Norway, and Harvard University, US, until rejoining Philips Research UK in March 2008. In May 2009, he joined the School of Electronics Engineering and Computer Science, Peking University, China, as a full professor. His main research interests include cooperative and cognitive communications, physical layer security, and device-to-device communications. He is co-authored 3 text books, and received 8 best paper awards, including WCNM 2007, ICCC 2012, ChinaCom2012, WCSP 2012, WCNC2012, ICC 2014, Globecom 2014, and ICC 2015. He is currently on the editorial board of IEEE Transactions on Wireless Communications. He is the recipient of 2012 IEEE Asia Pacific (AP) Young Researcher Award, and 2012 NSFC Outstanding Young Investigator Award. He is a senior member of IEEE and IEEE distinguished lecturer since 2015.
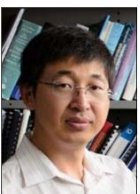
Yonghui Li (M'04-SM'09) received his PhD degree in November 2002 from Beijing University of Aeronautics and Astronautics. From 1999 – 2003, he was affiliated with Linkair Communication Inc, where he held a position of project manager with responsibility for the design of physical layer solutions for the LAS-CDMA system. Since 2003, he has been with the Centre of Excellence in Telecommunications, the University of Sydney, Australia. He is now an Associate Professor in School of Electrical and Information Engineering, University of Sydney. He is the recipient of the Australian Queen Elizabeth II Fellowship in 2008 and the Australian Future Fellowship in 2012. His current research interests are in the area of wireless communications, with a particular focus on MIMO, cooperative communications, coding techniques and wireless sensor networks. He holds a number of patents granted and pending in these fields. He is an executive editor for European Transactions on Telecommunications (ETT). He received the best paper awards from IEEE International Conference on Communications (ICC) 2014 and IEEE Wireless Days Conferences (WD) 2014.

Tutorial-3: Super Resolution Imaging and Research Trends
Time: 14:00-15:30, Nov. 2, Monday
Room: Roma, 1F

Instructor(s): Dr. Varsha H Patil (Matoshri College of Engineering and Research Centre)

Abstract: Super-Resolution Imaging serves as an essential reference for both academicians and practicing engineers. The tutorial shall cover the new research area of super resolution imaging. Super-Resolution Imaging tutorial presents a comprehensive analysis of current technology, along with new research findings and directions for future work. Aim is to cover Super Resolution basics, process, and current methodologies in use and under development and to create awareness and interest in this area as well as inspiration to researchers.

Biography of the instructors:

Professor Dr. **V. H. Patil** with 25 years of teaching experience is currently working as professor & Head of Computer Engineering department with additional responsibility of vice-principal at Matoshri College of Engineering & Research Centre situated at Nashik. She is member of board of studies of Computer Engineering at University of Pune. She is recipient of various honors & awards. She has authored 3 books in areas Discrete Mathematics, Data Structures and Theory of Computation published by publishers as McGraw Hill & Oxford University Press. She has 35 papers to her credit, which are published at various national and international Journals and conferences. She is life member of various professional bodies. Madam Patil is involved and has completed research projects under various funding bodies. Her areas of interest include Image Processing, Parallel Computing and Soft Computing.

Tutorial-4: Advanced Ad Hoc and Mesh Networks: From Theoretical to Practical
Time: 14:00-15:30, Nov. 2, Monday
Room: Milano, 3F

Instructor(s): Jiajia Liu (Xidian University)
Abstract: Ad hoc and mesh networks have been of significant importance among various networking techniques, and have received a great deal of attention from both academia and industry in the last decades. Recently, extensive research interests in ad hoc and mesh networks have been further sparkled around the newly emerging concepts of Internet-of-Things (IoT), LTE-A and 5G networks, D2D communication, machine type communication (MTC), cognitive radios, smart vehicle, unmanned aerial vehicles (UAVs), etc. Therefore, we provide a tutorial for the latest research progress in advanced ad hoc and mesh networking techniques, from both theoretical side and practical side.

Biography of the instructors:

Jiajia Liu (S'11-M'12) received the Ph.D. degree in information sciences from Tohoku University, Japan, in 2012. He was a Japan Society for the Promotion of Science (JSPS) special research fellow in Tohoku University from Apr. 2012 to Mar. 2014. He is currently a Full Professor at the School of Cyber Engineering, Xidian University. His research interests include wireless and mobile ad hoc networks, network modeling, evaluation and optimization, LTE-A and 5G networks. He received the Yasujiro Niwa Outstanding Paper Award in 2012, and the Best Paper Awards of IEEE WCNC in 2012 and 2014. He was also a recipient of the Chinese Government Award for Outstanding Ph.D. Students Abroad in 2011, the Tohoku University RIEC Student Award, and the Tohoku University Professor Genkuro Fujino Award in 2012, as well as the prestigious Dean Award and President Award of Tohoku University in 2013. He has been serving as editor for IEEE Network, guest editors and technical program committees of numerous international journals and conferences, including IEEE TETC, IEEE IoT Journal, WCNC 2013-2015, WCSP 2013-2015, etc. He is a member of IEEE.

Tutorial-5: Economics of TV White Space Networks
Time: 16:00-17:30, Nov. 2, Monday
Room: Tivoli, 3F

Instructor(s): Jianwei Huang (The Chinese University of Hong Kong), Lin Gao (Harbin Institute of Technology Shenzhen Graduate School)
Abstract: Database-assisted TV white space network is a promising paradigm of dynamic spectrum sharing, and can effectively improve the spectrum utilization and alleviate the spectrum scarcity, via the centralized control of TV white space databases residing in the cloud. In this tutorial, we discuss the business modeling for database-assisted TV white space network, which is very important for the wide commercialization of this promising technology. Motivated by several recent business practices, we will discuss two types of different business models: spectrum market and information market. In the spectrum market model, spectrum licensees, through spectrum brokers acted by databases, lease the under-utilized (licensed) TV channels to unlicensed wireless devices for secondary utilization. In the information market model, databases sells the advanced information regarding (unlicensed) TV channels to unlicensed wireless devices in order to enhance the secondary spectrum utilization performance. We will discuss the trading mechanism for both market models, and evaluate the feasibility and performance of both models through theoretical and numerical studies.

Biography of the instructors:

Jianwei Huang (S'01-M'06-SM'11) is an Associate Professor and Director of the Network Communications and Economics Lab, in the Department of Information Engineering at the Chinese University of Hong Kong. He received his Ph.D. from Northwestern University in 2005, and worked as a Postdoc Research Associate at Princeton University during 2005-2007. His main research interests are in the area of network economics and games, with applications in wireless communications, networking, and smart grid. He is a Senior Member of IEEE, and a Distinguished Lecturer of IEEE Communications Society (2015-2016). Dr. Huang is the co-recipient of 8 Best Paper Awards, including IEEE Marconi Prize Paper Award in Wireless Communications in 2011, and Best (Student) Paper Awards from IEEE WiOpt 2015, IEEE WiOpt 2014, IEEE WiOpt 2013, IEEE SmartGridComm 2012, WiCON 2011, IEEE GLOBECOM 2010, and APCC 2009. He received the IEEE ComSoc Asia-Pacific Outstanding Young Researcher Award in 2009. He has co-authored four books: "Wireless Network Pricing," "Monotonic Optimization in Communication and Networking Systems," "Cognitive Mobile Virtual Network Operator Games," and "Social Cognitive Radio Networks". He has co-authored four "ESI Highly Cited Papers," which are among the top 1% papers in terms of citations within the field of Computer Science according to Web of Science. Dr. Huang has served as an Editor of IEEE Transactions on Cognitive Communications and Networking (2015-), Editor of IEEE Transactions on Wireless Communications (2010-2015), Editor of IEEE Journal on Selected Areas in Communications - Cognitive Radio Series (2011-2014), Editor and Associate Editor-in-Chief of IEEE Communications Society Technology News (2012-2014), and Editor-in-Chief of IEEE ComSoc TCCN Communications (2015-). He has served as a Guest Editor of IEEE Transactions on Smart Grid special issue on "Big Data Analytics for Grid Modernization" (2016), IEEE Network special issue on "Smart Data Pricing" (2016), IEEE Journal on Selected Areas in Communications special issues on "Economics of Communication Networks and Systems" (2012) and "Game Theory in Communication Systems" (2008), and IEEE Communications Magazine feature topic on "Communications Network Economics" (2012). Dr. Huang has served as Vice Chair (2015-2016) of IEEE Communications Society Cognitive Network Technical Committee, Vice Chair (2010-2012) and Chair (2012-2014)

of IEEE Communications Society Multimedia Communications Technical Committee, a Steering Committee Member of IEEE Transactions on Multimedia (2012-2014) and IEEE International Conference on Multimedia & Expo (2012-2014), Chair of Meeting and Conference Committee (2012-2013) and Vice Chair of Technical Affairs Committee (2014-2015) of IEEE ComSoc Asia-Pacific Board. He has served as the TPC Co-Chair of IEEE WiOpt 2017, IEEE ICCC 2015 Wireless Communications System Symposium, IEEE SDP 2015, NetGCoop 2014, IEEE SmartGridComm 2014 Demand Response and Dynamic Pricing Symposium, IEEE GLOBECOM 2013 Selected Areas of Communications Symposium, IEEE WiOpt 2012, IEEE ICCC 2012 Communication Theory and Security Symposium, IEEE GlOBECOM 2010 Wireless Communications Symposium, IWCMC 2010 Mobile Computing Symposium, and GameNets 2009. He is a frequent TPC member of leading networking conferences such as INFOCOM and MobiHoc. He is the recipient of IEEE ComSoc Multimedia Communications Technical Committee Distinguished Service Award in 2015 and IEEE GLOBECOM Outstanding Service Award in 2010.

Lin Gao (S'08-M'10) is an Associate Professor in the School of Electronic and Information Engineering, Harbin Institute of Technology (HIT) Shenzhen Graduate School. He received M.S. and Ph.D. degrees in Electronic Engineering from Shanghai Jiaotong University (China) in 2006 and 2010, respectively, and worked as a Postdoc Fellow in the Department of Information Engineering at the Chinese University of Hong Kong during 2010-2015. His research interests are in the game theory and network economics, in particular, the game-theoretic modeling and analysis for cooperative communications, cognitive radio networks, TV white space networks, cellular-WiFi interworking, mobile cloud computing, and mobile crowdsourcing. He is the co-recipient of 3 Best Paper Awards in the IEEE International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt 2013, 2014, and 2015). Dr. Gao has served as a Guest Editor of special issue on "Economics and Optimizations in Wireless Communication Networks (EOWC)", in Journal of Mobile Information Systems (2015). He has served as Publicity Chair of the 4th IEEE Workshop on Smart Data Pricing (SDP 2015), and Symposium Chair of Pricing and Network Optimization Symposium in the 5th International Conference on Game Theory for Networks (GameNets 2014). He is the TPC member of a variety of leading networking conferences such as ICC, GLOBECOM, and WiOpt.

Tutorial-6: Energy Harvesting Wireless Communications: Resource Management and Cross-Layer Design
Time: 16:00-17:30, Nov. 2, Monday
Room: Parma, 3F

Instructor(s): Sheng Zhou (Tsinghua Univ.), Chuan Huang (Univ. Electronic Science and Technology of China)
Abstract: In this tutorial, we provide an extensive overview for the recent research advances in the emerging energy harvesting wireless communications, in particular from the physical layer resource management and cross layer design point of view. Starting from the basic concepts of wireless communications powered by energy harvesters and the modeling of the random energy arrival processes, we overview the state-of-the-art results on the capacity/throughput limits for various types of wireless channels powered by energy harvesters. Then, we summarize the cross-layer designs that match the harvested energy to stochastic traffic variations over time and space, medium access control, and dynamic node sleeping, respectively. Finally, some applications of energy harvesting to the upcoming 5G systems are also discussed.

Biography of the instructors:

Sheng Zhou (S'06–M'12) is an assistant professor in Electronic Engineering Department at Tsinghua University, Beijing, China. He received his B.S. and Ph.D. degrees in Electronic Engineering from Tsinghua University, in 2005 and 2011, respectively. From January to June 2010, he was a visiting student at Wireless System Lab, Electrical Engineering Department, Stanford University. His research interests include cross-layer design for multiple antenna systems, cooperative transmission in cellular systems, and green wireless communications. Dr. Zhou has been studying on green communications since 2009 and published extensively in this area. He served as the guest co-editor for the China Communications Feature Topic on Energy Conservation and Harvesting for Green Communications (published on March. 2014). He served as the publicity chair of IEEE ICCC'12, the SPC symposium co-chair of IEEE ICCC'15, and the TPC member of WCNC, VTC, ICC, and GLOBECOM. He is a co-recipient of the Best Paper Award from the Asia-Pacific Conference on Communication (APCC) in 2009 and 2013, the 23th IEEE International Conference on Communication Technology (ICCT) in 2011, and the 25th Intl. Tele-traffic Cong. (ITC) in 2013.

Chuan Huang (S'09–M'13) is a professor in National Key Laboratory of Science and Technology on Communications, University of Electronic Science and Technology of China, Chengdu. He received his Ph.D. in Electrical Engineering from Texas A&M University, US, in 2012, and his M.S. in Communications Engineering and B.S. in Math both from University of Electronic Science and Technology of China in 2008 and 2005, respectively. From Aug. 2012 to Dec. 2013, he had been a Postdoc Research Fellow, and then promoted as an Assistant Research Professor from Dec. 2013 to July 2014 both at Arizona State University, Tempe, Arizona, USA. He had also worked as a visiting scholar at National University of Singapore and a research associate at Princeton University, respectively. His current research interests include energy harvesting communications, multicast traffic scheduling, full-duplex communications, and signal processing in wireless communications. Dr. Huang is the recipient of the "1000 plan" in Sichuan Province, China. He served as a guest editor of IEEE Access Journal, and the TPC member of WCNC, ICC, and GLOBECOM

## Tutorial-7: Advanced Techniques Driving Mobile Communications Forward
Time: 16:00-17:30, Nov. 2, Monday
Room: Roma, 1F

Instructor(s): Lie-Liang Yang (Univ. Southampton)

Abstract: Driven by the explosive growth of the variety of wireless services, mobile communications have been in the rapid development for several decades through the introduction of various advanced techniques at different stages. Without any doubt, this trend will continue to the future, towards the mobile networks that are capable of providing ultra high capacity while at relatively low cost, and are supported by the techniques of high spectral- and energy-efficiency, high flexibility and intelligence. Currently, a lot of researches are going on worldwide for the 5G mobile systems, with the motivation to support, such as, 1000 times the current system capacity, 10 times the spectral efficiency, energy efficiency and data rate, and 25 times the average cell throughput. This tutorial will first review the state-of-the-art in mobile communications, with the emphasis on the history, principles and regulations of some typical techniques as well as their limits. Following the routes of the development of mobile communications, we will then discuss a range of techniques that may be employed for driving mobile communications to the future. The principles, advantages and challenges of a range of advanced techniques will be addressed, which may include heterogeneous wireless networking, Multiple-Input Multiple-Output (MIMO) and massive MIMO, resource allocation, cross-layer optimization, cooperative communications, cognitive radios, multicell cooperation/processing and Coordinated MultiPoint (CoMP), ultra-dense deployment and user-centered distributed antenna concepts, MilliMeter-Wave (MMW) communications, mobile social networks, etc. The tutorial will be concluded by the discussion of some open research issues towards the future generations of mobile communication systems.

Biography of the instructors:
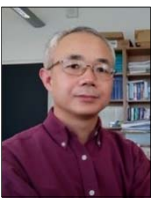
Lie-Liang Yang (M'98, SM'2002) received his M.Eng and Ph.D degrees in communications and electronics from Northern (Beijing) Jiaotong University, Beijing, China in 1991 and 1997, respectively, and his B.Eng degree in communications engineering from Shanghai Tiedao University, Shanghai, China in 1988. Since December 1997, he has been with the University of Southampton, where he has been the professor of wireless communications since 2010. During his more than 20-year research/academic career, he has carried out research on a wide range of topics in wireless communications, wireless networks and signal processing for wireless communications. He has authored/co-authored three books, published 300+ research papers, which include 120+ journal papers and 190+ conference papers, mainly in IEEE/IET journals and IEEE conference proceedings. Dr. Yang is a Fellow of the IET (previously IEE) in the UK and a senior member of the IEEE in the USA. He acted as TPC/symposium/area/track/workshop chairs for various conferences and was involved in the teams of Technical Programme Committees (TPC) of many conferences. He has served as an associate editor to several journals, including IEEE Transactions of Vehicular Technology and IEEE Access, and as one of the guest editors organized several special issues for the journals, including IEEE Journal on Selected Areas in Communications, IEEE Wireless Communication Magazine, IEEE Communication Magazine.

INDUSTRIAL & ACADEMIC PANELS

IAP-1
5G technology in Japan & panel discussion
Date: November 2, Monday
Time: 14:00-17:30
Room: Firenze, 3F
Session Chair: Dr. Jianming Wu
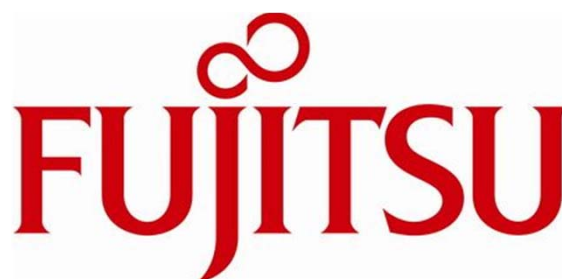
Time	Title	Speaker
14:00-14:30	For Scalable Functionalities for 5G Cellular Networks	Osaka University Prof. Seiichi Sampei
14:30-15:00	Efficient Multi-access Technologies for Future Cellular Systems	Tokyo City University Prof. Mamoru Sawahashi
15:00-15:30	Towards 5G Actualization in 2020 and Beyond	NTT DoCoMo Yukihiko Okumura
16:00-16:30	Embarking on Mobile Communications systems for 2020 and beyond	Fujitsu Takaharu Nakamura
16:30-17:30	Panel Discussion	Above 4 members

Seiichi Sampei received the B.E., M.E. and Ph.D. degrees in electrical engineering from Tokyo Institute of Technology, Japan, in 1980, 1982 and 1991, respectively. From 1982 to 1993, he was with the Communications Research Laboratory, Ministry of Posts and Telecommunications. During 1991 to 1992, he was at the University of California, Davis, as a visiting researcher. In 1993, he joined the Faculty of Engineering, Osaka University and he is currently a Professor in the Department of Information and Communications Technology, Osaka University. He has developed adaptive modulation, intelligent radio transmission/access, cognitive wireless networking, wireless distributed network techniques and millimeter wave system techniques. He is a director of Technical Committee in 5GMF (Fifth Generation Mobile communication Forum). He received the Shinohara Young Engineering Award, the Achievements Award, Communications Society Best Paper Award, and Best Paper Award from the IEICE (Institute of Electronics, Information and Communication Engineers), the Telecom System Technology Award from the Telecommunication Advancement Foundation, the DoCoMo Mobile Science Award from Mobile Communication Fund, and the Ericsson Telecommunication Award. He is a member of the Institute of Image Information and Television Engineers (ITE), and a Fellow of IEICE and IEEE.

Takaharu Nakamura received the B.S. in Electronic Engineering from Chiba University, Japan, in 1983. He joined Fujitsu Laboratories Ltd. in 1983 and moved to Fujitsu Limited in 2003, where he was engaged in the development of mobile radio communications systems. He has been contributing to standardization activities for 3G and 4G wireless systems at Association of Radio Industries and Businesses (ARIB) and The 3rd Generation Partnership Project (3GPP) since 1998. In ARIB, he has been serving as a vice chairman of Mobile Partnership Subcommittee, Advanced Wireless Communications Study Committee since 2006, and appointed as a sub-leader of 2020 and beyond AdHoc in 2013. He also has been serving as an acting chairman of Technical committee, The Fifth Generation Mobile Communications Promotion Forum. For 3GPP, he was serving as the chairman of TSG-RAN-WG4 from 2007 to 2011 and has been a vice chairman of TSG-RAN since 2012. He is a member of the Institute of Electronics, Information and Communication Engineers of Japan (IEICE).

Seiichi Sampei received the B.E., M.E. and Ph.D. degrees in electrical engineering from Tokyo Institute of Technology, Japan, in 1980, 1982 and 1991, respectively. From 1982 to 1993, he was with the Communications Research Laboratory, Ministry of Posts and Telecommunications. During 1991 to 1992, he was at the University of California, Davis, as a visiting researcher. In 1993, he joined the Faculty of Engineering, Osaka University and he is currently a Professor in the Department of Information and Communications Technology, Osaka University. He has developed adaptive modulation, intelligent radio transmission/access, cognitive wireless networking, wireless distributed network techniques and millimeter wave system techniques. He is a director of Technical Committee in 5GMF (Fifth Generation Mobile communication Forum). He received the Shinohara Young Engineering Award, the Achievements Award, Communications Society Best Paper Award, and Best Paper Award from the IEICE (Institute of Electronics, Information and Communication Engineers), the Telecom System Technology Award from the Telecommunication Advancement Foundation, the DoCoMo Mobile Science Award from Mobile Communication Fund, and the Ericsson Telecommunication Award. He is a member of the Institute of Image Information and Television Engineers (ITE), and a Fellow of IEICE and IEEE.

Yukihiko Okumura received his M.S. degree in electrical engineering from Tokyo University of Science in 1991, and his Ph. D. degree in engineering from Tohoku University in 2006. In 1991, he joined NTT Radio Communications Systems Laboratories of Nippon Telegraph and Telephone Corporation, and since 1992, he has been engaged in the research, standardization and development of wideband/broadband mobile radio communication technologies, terminals and systems, at NTT Mobile Communications Network, Inc. (now NTT DOCOMO, INC.).

IEEE/CIC ICCC 2015   Intelligent Communications for a Connected Cyberspace

IAP-2
Innovate Faster Workshop
Date: November 3, Tuesday
Time: 14:00-16:00
Room: Tivoli, 3F
Session Chair: Yuan Yao

14:00 - 15:00
From Concept to Reality---NI Wireless Research Platform Overview by **Yuan Yao**

15:00 - 16:00
mmWave research based on NI's SDR platform by **Takao Inoue**

Yuan Yao, Market Development Manager, RF & Wireless
   Yuan is the Market Development Manager for RF & Wireless in China and responsible for the business and market development on RF and wireless industry and application. Particularly in 5G and advanced RF research area, Yuan has established several strategic collaboration projects with the industrial leaders like WiCO, ZTE and Huawei to design, simulate, and prototype next generation wireless systems. These projects have covered several key technology vectors around 5G based on NI platform such as massive MIMO prototyping, high density network simulation and mmWave baseband prototype.

Takao Inoue, Ph.D.
Takao Inoue received his Ph.D. from the University of Texas at Austin and his M.S.E.E. and B.S.E.E. from Oregon State University. He is currently a Senior RF Platform Engineer at National Instruments working on 5G physical layer research projects and 3GPP RAN1/4 delegate for NI. Prior to NI, he has worked for Motorola and co-founded a successful startup company in Japan specialized in wireless prototype development. He actively participates in IEEE conference steering committees, technical program committees, and transactions paper reviews, including the 2014 IEEE Radio Wireless Week as the general chairman and 2012 IEEE Radio Wireless Week as the technical program chair.

NATIONAL INSTRUMENTS™

IAP-3
Applications of IoT in Safety Monitoring of The South To North Water Diversion Project
Date: November 3, Tuesday
Time: 14:00-17:30
Room: Roma, 1F
Session Chair: Yang Yang

Bio:

Yang Yang received the BEng and MEng degrees in Radio Engineering from Southeast University, Nanjing, P. R. China, in 1996 and 1999, respectively; and the PhD degree in Information Engineering from The Chinese University of Hong Kong in 2002.

Dr. Yang Yang is currently a Professor with the School of Information Science and Technology, ShanghaiTech University, and the Director of Shanghai Research Center for Wireless Communications (WiCO). Prior to that, he has served Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences, as a Professor; the Department of Electronic and Electrical Engineering at University College London (UCL), United Kingdom, as a Senior Lecturer; the Department of Electronic and Computer Engineering at Brunel University, United Kingdom, as a Lecturer; and the Department of Information Engineering at The Chinese University of Hong Kong as an Assistant Professor. His research interests include wireless ad hoc and sensor networks, wireless mesh networks, next generation mobile cellular systems, intelligent transport systems, and wireless testbed development and practical experiments.

Dr. Yang Yang has co-edited a book on heterogeneous celluar networks (2013, Cambridge University Press) and co-authored more than 100 technical papers. He has been serving in the organization teams of about 50 international conferences, e.g. a co-chair of Ad-hoc and Sensor Networking Symposium at IEEE ICC'15, a co-chair of Communication and Information System Security Symposium at IEEE Globecom'15.

江苏省物联网技术与应用系统创新中心
JiangSu Collaborative Innovation Center
for Technology and Application of Internet of Things

TECHNICAL Sessions

CCT-1: Oral Session   CCT-2: Oral Session
CCT-3: Oral Session   CCT-4: Oral Session
OCSN-1: Oral Session
PSC-1: Oral Session   PSC-2: Oral Session
PSC-3: Poster Session
SNBD-1: Oral Session   SNBD-2: Oral Session
SNBD-3: Poster Session
SPC-1: Oral Session   SPC-2: Oral Session
SPC-3: Oral Session   SPC-4: Poster Session
STC-1: Oral Session   STC-2: Oral Session
WCS-1: Oral Session   WCS-2: Oral Session
WCS-3: Oral Session   WCS-4: Oral Session
WCS-5: Oral Session   WCS-6: Oral Session
WCS-7: Oral Session   WCS-8: Oral Session
WCS-9: Oral Session   WCS-10: Poster Session
WNM-1: Oral Session   WNM-2: Oral Session
WNM-3: Oral Session
NGN-1: Oral Session   NGN-2: Oral Session
NGN-3: Poster Session

Tuesday, 3 November. 2015

CCT-1:
SESSION CHAIR: Ruosi Liu, Huawei Technologies Co., Ltd, P.R. China
Tuesday, 3 November, 2015. 11:00-12:30 pm
ROOM: Verona

Invited Paper: *Extendable CQI Table Design for Higher Order Modulation in LTE Downlink Transmission*
Nanxi Li (Beijing University of Posts and Telecommunications, P.R. China); Zaixue Wei (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Jinhui Chen (Sony China Research Lab, P.R. China); Chen Sun (SONY, P.R. China); Lin Sang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)

An Optimization on GLRT-based Detection for LTE PUCCH
LiJun Xie (Beijing University of Posts and Telecommunications, P.R. China); Tao Peng (Beijing University of Posts and Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)

A Novel Bandwidth Estimation Algorithm of TCP Westwood in Typical LTE Scenarios
Zehang Chen (Beijing University of Posts and Telecommunications, P.R. China); Yitong Liu (Beijing University of Post and Telecommunications, P.R. China); Yameng Duan (Beijing University of Posts and Telecommunications, P.R. China); Hao Liu (Beijing University of Posts and Telecommunications, P.R. China); Gang Li (China Mobile Research Institute, P.R. China); Yami Chen (China Mobile Research Institute, P.R. China); Junshuai Sun (China Mobile Research Institution, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China)

Density Evolution Analysis of LDPC codes with Different Receivers on Impulsive Noise Channels
Zhen Mei (Newcastle University, United Kingdom); Martin Johnston (Newcastle University, United Kingdom); Stephane Y. LeGoff (University of Newcastle upon Tyne, United Kingdom); Li Chen (Sun Yat-sen University, P.R. China)

Code-Aided Channel Estimation and Decoding over the Flat Fading Channel with No Pilot Symbol
Haifeng Yuan (National University of Singapore, Singapore); Ming-Wei Wu (Zhejiang University of Science and Technology, P.R. China); Pooi-Yuen Kam (National University of Singapore, Singapore)

Alternate Convex Search Method for Resource Allocation in OFDMA AF Relay Networks with Energy Harvesting
Yanyan Shen (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China); Xiaoxia Huang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China); Bo Yang (Shanghai Jiao Tong University, P.R. China); Shuqiang Wang (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China)

CCT-2:
SESSION CHAIR: Shalina Percy Delicia George Ford (Karlsruhe Institute of Technology, Germany)
Tuesday, 3 November, 2015. 11:00-12:30 pm
ROOM: Torino

Invited Paper: *Performance Analysis Of Reed Muller Coded OFDM On Nakagami-m Fading Environment*
M Maksud Alam (North South University, Bangladesh); Zahidul Amin (North South University, Bangladesh); Md. Serajul Abrar (North South University, Bangladesh)

Modeling SCMA in D2D underlaid Cellular Network
Junyu Liu (Xidian University, P.R. China); Yan Shi (Xidian University, P.R. China); Lei Liu (Xidian University, P.R. China); Min Sheng (Xidian University, P.R. China); Jiandong Li (Xidian Univers)

MUBFP: Multi-User Beamforming and Partitioning in Downlink MIMO Systems
Bin Hu (Shanghai Jiao Tong University, P.R. China); Cunqing Hua (Shanghai Jiao Tong University, P.R. China); Feilong Lin (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)

Statistical Beamforming for FDD Massive MIMO Downlink Systems
Cheng Zhang (Southeast University, P.R. China); Zhaohua Lu (ZTE Corporation, P.R. China); Yongming Huang (Southeast University, P.R. China); Jing Zhang (Southeast University, P.R. China); Luxi Yang (Southeast University, P.R. China)

Context Aware Energy Efficient Optimization for Video On-demand Service over Wireless Networks
Changyang She (Beihang University, P.R. China); Chenyang Yang (Beihang University, P.R. China)

Outage Analysis on Type I HARQ over Time-Correlated Rayleigh Fading Channels
Zheng Shi (University of Macau, P.R. China); Shaodan Ma (University of Macau, P.R. China); Kam Weng Tam (University of Macau, P.R. China)

NGN-1:
SESSION CHAIR: Ye Wang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)
Tuesday, 3 November, 2015. 11:00 am until 12:30 pm
ROOM: Roma

Invited Paper: *L0.5-Regularization Based Distributed Channel Estimation for Industrial Wireless Sensor Network*
Ziwen Yang (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)

A Multi-Path Forwarding Strategy for Content-Centric Networking
Zhang Guanghui (Shenzhen Graduate School, Peking University, P.R. China); Li Hui (Shenzhen Graduate School, Peking University, P.R. China); Tingting Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China); Dagang Li (Peking University, P.R. China); Xu Li (Shenzhen Graduate School, Peking University, P.R. China)

On Energy-delay Efficiency for WBAN: a Multi-channel Scheme
Beibei Zhang (Xidian University, P.R. China); Changle Li (Xidian University, P.R. China); Zhe Liu (Xidian University, P.R. China); Xiaoming Yuan (Xidian University, P.R. China); Li Yang (Xidian University, P.R. China)

Distributed Edge Caching Scheme Considering the tradeoff between the diversity and redundancy of cached content
Shuo Wang (Beijing University of Posts and Telecommunications, P.R. China); Xing Zhang (Beijing University of Posts and Telecommunications, P.R. China); Kun Yang (BUPT, P.R. China); Lin Wang (Beijing University of Posts & Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)

On The Energy Efficiency Of The Adaptive Algorithm In Hybrid Uplink Cellular Networks
Lin Wang (Beijing University of Posts & Telecommunications, P.R. China); Xing Zhang (Beijing University of Posts and Telecommunications, P.R. China); Kun Yang (BUPT, P.R. China); Shuo Wang (Beijing University of Posts and Telecommunications, P.R. China)

A Block Regression Model for Short-Term Mobile Traffic Forecasting
Huimin Pan (Tsinghua University, P.R. China); Jingchu Liu (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China)

NGN-2:
SESSION CHAIR: Shaohua Wu (Harbin Institute of Technology, P.R. China)
Tuesday, 3 November, 2015. 04:00 pm until 05:30 pm
ROOM: Roma

Invited Paper: *Exploiting Social Interest Interactions for User Clustering and Content Dissemination in Device-to-Device Communications*
Zilong Wu (Beijing University of Posts and Telecommunications, P.R. China); Li Wang (Beijing University of Posts and Telecommunications, P.R. China); Giuseppe Araniti (University Mediterranea of Reggio Calabria, Italy); Zhu Han (University of Houston, USA)

Broadcasting Based Neighborhood Cooperative Caching for Content Centric ad hoc Networks
Le Zhou (Beijing University of Posts and Telecommunications, P.R. China); Tiankui Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xiaogeng Xu (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Yinlong Liu (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

Research of Heterogeneous Networks Convergence with NOMA
Jie Zeng (Tsinghua University, P.R. China); Bing Li (Tsinghua University, P.R. China); Xin Su (Tsinghua University, P.R. China)

Coordinated Precoding for D2D Communications Underlay Uplink MIMO Cellular Networks
Bing Fang (College of Communications Engineering, PLA University of Science and Technology, P.R. China); Zuping Qian (PLA University of Sci. & Tech., P.R. China); Wei Zhong (College of Communications Engineering, PLAUST, P.R. China); Wei Shao (College of Communications Engineering, PLA University of Science and Technology, P.R. China); Hong Xue (College of Communications Engineering, PLA University of Science and Technology, P.R. China)

Performance Comparison of Congestion Control Strategies for Multi-Path TCP in the NorNet Testbed
Fa Fu (Hainan University, P.R. China); Xing Zhou (Hainan University, P.R. China); Thomas Dreibholz (Simula Research Laboratory, Norway); Keying Wang (Hainan University, P.R. China); Feng Zhou (Hainan University, P.R. China); Quan Gan (China Unicom Hainan Branch, P.R. China)

Grey Relational Analysis Based Cross-layer Caching for Content Centric Networking
Lixia Wu (Being University of Posts and Telecommunication, P.R. China); Tiankui Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xiaogeng Xu (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Yinlong Liu (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

OCSN-1:
SESSION CHAIR: Shengli Yuan (University of Houston-Downtown, USA)
Tuesday, 3 November, 2015. 04:00 pm until 05:30 pm
ROOM: Parma

Invited Paper: *Comparison Analysis of Adaptive Free-Space Optical Transmissions Over Turbulence Channels*
Lei Kong (Southeast University, P.R. China); Wei Xu (Southeast University, P.R. China); Chunming Zhao (National Mobile Communications Research Laboratory, Southeast University, P.R. China)

Efficient Symbol Detection for the FSO IM/DD System with Automatic and Adaptive Threshold Adjustment: The Multi-level PAM Case
Tianyu Song (National University of Singapore, Singapore); Pooi-Yuen Kam (National University of Singapore, Singapore)

Flow Entries Installation Based on Distributed SDN Controller
Rui Liu (Beihang University, P.R. China); MingFa Zhu (School of Computer Science and Engineering, Beihang University, P.R. China); Limin Xiao (Beihang University, P.R. China); Li Ruan (Beihang University, P.R. China); Wenbo Duan (Beihang University, P.R. China); Yuanhao Zhou (Beihang University, P.R. China); Deguo Li (Beihang University, P.R. China); Zhigang Xu (Beihang University, P.R. China)

Optical OFDM Aided Enhanced 3-D Visible Light Communication Systems
Jiawei Chen (Sun Yat-sen University, P.R. China); Ming Jiang (Sun Yat-sen University, P.R. China); Bo Chen (Sun Yat-sen University, P.R. China)

Multi-user Visible Light Communication Systems with Precoded SM and SPPM
Kunyi Cai (Sun Yat-sen University, P.R. China); Ming Jiang (Sun Yat-sen University, P.R. China)

PSC-1:
SESSION CHAIR: Rongxing Lu (Nanyang Technological University, Singapore)
Tuesday, 3 November, 2015. 11:00 am until 12:30 pm
ROOM: Tivoli

Invited Paper: *Diverse Multi-keyword Ranked Search over Encrypted Cloud Data Supporting Range Query*
Hongwei Li (University of Electronic Science and Technology of China, P.R. China); Hao Ren (University of Electronic Science and Technology of China, P.R. China); Hao Chen (University of Electronic Science and Technology of China, P.R. China); Hongxian Yao (University of Electronic Science and Technology of China, P.R. China); Guowen Xu (University of Electronic Science and Technology of China, P.R. China); Yuanshun Dai (University of Electronic Science and Technology of China, P.R. China)

PN-sequence Masked Spread-Spectrum Data Embedding
Ming Li (Dalian University of Technology, P.R. China); Qian Liu (University at Buffalo, USA); Bo Wang (Dalian University of Technology, P.R. China); Yanqing Guo (Dalian University of Technology, P.R. China); Xiangwei Kong (Dalian University of Technology, P.R. China)

Joint Transmit Antenna Selection and Jamming for Security Enhancement in MIMO Wiretap Channels
Yajun Zhang (PLA University of Science and Technology & Postgraduate Team 4, Institute of Communications Engineering, P.R. China); Tao Liang (Nanjing Telecommunication Technology Institute, P.R. China); Ai-Wei Sun (PLA University of Science & Technology, P.R. China)

Position-Based Proxy Signcryption
Qingshui Xue (Shanghai Jiao Tong University, P.R. China); Fengying Li (Shanghai Jiao Tong University, P.R. China); Guojian Ge (Shanghai Jiao Tong University, P.R. China); Jiachen Shen (East China Normal University, P.R. China); Zhenfu Cao (Shanghai Jiao Tong University, P.R. China)

Performance Analysis of Secure Buffer-aided Cognitive Radio Networks
Ai-Wei Sun (PLA University of Science & Technology, P.R. China); Tao Liang (Nanjing Telecommunication Technology Institute, P.R. China); Yajun Zhang (PLA University of Science and Technology & Postgraduate Team 4, Institute of Communications Engineering, P.R. China)

A MSPCA based Intrusion Detection Algorithm for Detection of DDoS Attack
Zhaomin Chen (Nanyang Technological University, Singapore)

PSC-3:
SESSION CHAIR: Changlong Lu (Jingdezhen Ceramic Institute, P.R. China)
Tuesday, 3 November, 2015. 02:00 pm until 03:30 pm
ROOM: Louge 1F

Invited Paper: *A General Time-domain Artificial Noise Design for OFDM AF Relay Systems*
Duhuo Cheng (Xi'an Jiaotong University, P.R. China); Zhenzhen Gao (Xi'an Jiaotong University, P.R. China); Feng Liu (Xi'an Jiaotong University, P.R. China); Xuewen Liao (Xi'an Jiaotong University, P.R. China)

SNBD-1:
SESSION CHAIR: Ying Wang (Beijing University of Posts and Telecommunications, P.R. China)
Tuesday, 3 November, 2015. 02:00 pm until 03:30 pm
ROOM: Verona

Invited Paper: *G2G: Privacy-preserving Group Matching for Proximity-based Mobile Social Networks*
Xiaoyan Zhu (Xidian University, P.R. China); Zengbao Chen (Xidian University, P.R. China); Wenye Wang (NC State University, USA)

Trajectory-based Node Selection Scheme in Vehicular Crowdsensing
Kang Han (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Qianli Zhao (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)

An Improved Matrix Factorization Model under Multidimensional Context Situation
Jiajun Liu (Beijing University of Posts and Telecommunications,

P.R. China); <u>Ying Wang</u> (Beijing University of Posts and Telecommunications, P.R. China);<u>Haiqing Tao</u> (Beijing University Of Posts And Telecommunications, P.R. China)

Co-Media: Creating Active Interactions For Localized Community With Social Media
<u>Ji-Dong Wang</u> (Shanghai Jiao Tong University, P.R. China); Guangshuo Chen (INRIA, France); Jia-Liang Lu (Shanghai Jiao Tong University, P.R. China); Min-You Wu (Shanghai JiaoTong University, P.R. China)

Bayesian Graphic Model Based User Preference Prediction for Future Personalized Service Provisioning
<u>Ying Wang</u> (Beijing University of Posts and Telecommunications, P.R. China); Peilong Li (BUPT, P.R. China); <u>Haiqing Tao</u> (Beijing University Of Posts And Telecommunications, P.R. China); Rui Meng (Beijing University of Posts and Telecommunications, P.R. China); Jiajun Liu (Beijing University of Posts and Telecommunications, P.R. China)

SNBD-3:
SESSION CHAIR: Lie-Liang Yang (University of Southampton, United Kingdom)
Tuesday, 3 November, 2015. 02:00 pm until 03:30 pm
ROOM: Louge 1F

Invited Paper: _Routing Protocols for Mobile Social Networks Achieving Trade-Off among Energy Consumption, Delivery Ratio and Delay_
Pitiphol Pholpabu (University of Southampton, United Kingdom); Lie-Liang Yang (University of Southampton, United Kingdom)

Role Playing Mobility Model for Mobile Social Networks
Pitiphol Pholpabu (University of Southampton, United Kingdom); Lie-Liang Yang (University of Southampton, United Kingdom)

Privacy-Preserving Friendship Establishment based on Blind Signature and Bloom Filter in Mobile Social Networks
Xiaoyan Zhu (Xidian University, P.R. China); Yang Su (Xidian University, P.R. China); Manfei Gao (Xidian University, P.R. China); Yizhe Huang (Xidian University, P.R. China)

SPC-1:
SESSION CHAIR: Shuai Han (Harbin Institute of Technology, P.R. China)
Tuesday, 3 November, 2015. 11:00 am until 12:30 pm
ROOM: Ball Room-B

Invited Paper: _Joint Suppression of PAPR and Sidelobe of Hybrid Carrier Communication System Based on WFRFT_
Zhenduo Wang (Harbin Institute of Technology, P.R. China); Lin Mei (Harbin Institute of Technology, P.R. China); Xiaolu Wang (HIT, P.R. China); Naitong Zhang (Communication Research Center, Harbin Institute of Technology, P.R. China); Wang Shaobo (Shenzhen Academy of Aerospace Technology, P.R. China)

Low-complexity Iterative Doppler Spread and Channel Estimation over Rayleigh Fading Channels
Zichen Wang (University of Wollongong, Australia); Yuxi Ruan (University of Wollongong, Australia); Qinghua Guo (University of Wollongong, Australia); Sheng Tong (University of Wollongong, Australia); Jun Tong (University of Wollongong, Australia); Jiangtao Xi (University of Wollongong, Australia)

A Narrowband Interference Suppression Algorithm for Time Synchronization
Fengwei Liu (University of Electronic Science and Technology of China, P.R. China); Hongzhi Zhao (UESTC, P.R. China); Youxi Tang (University of Electronic Science and Technology of China, P.R. China)

Enhanced Turbo Detection For SCMA Based On Information Reliability
Boya Ren (Harbin Institute of Technology, P.R. China); Shuai Han (Harbin Institute of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China); Cheng Li (Memorial University of Newfoundland, Canada); Xuanli Wu (Communication Research Center, Harbin Institute of Technology, P.R. China); Xuejun Sha (Communication Research Center, Harbin Institute of Technology, P.R. China)

Statistical Prior Based Low Complexity Recovery for Compressed Image Sensing
Jingran Yang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Shaohua Wu (Harbin Institute of Technology, P.R. China); Haixu Wang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Jiahui Li (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)

A Novel Network Design and Operation for Reducing Transmission Power in Cloud Radio Access Network with Power over Fiber
<u>Yunseong Lee</u> (Tohoku University, Japan); Katsuya Suto (Tohoku University, Japan); Hiroki Nishiyama (Tohoku University, Japan); Nei Kato (Tohoku University, Japan); Hirotaka Ujikawa (NTT, Japan); Ken-Ichi Suzuki (NTT, Japan)

SPC-2:
SESSION CHAIR: Sheng Zhou (Tsinghua University, P.R. China)
Tuesday, 3 November, 2015. 04:00 pm until 05:30 pm
ROOM: Torino

Invited Paper: _A (0,1)-Quadratic Programming Based Relay Selection Method_
Jie Qiong Si Zheng (Nankai University, P.R. China); Haihua Chen (Nankai University, P.R. China); Li Zhang (Nankai University, P.R. China); Guiling Sun (Nankai University, P.R. China)

PCA Based Limited Feedback Scheme for Massive MIMO with Kalman Filter Enhancing Performance
Anmeng Ge (Beijing University of Posts and Telecommunications, P.R. China); <u>Tiankui Zhang</u> (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Yong Sun (Beijing University of Posts and Telecommunications, P.R. China)

Semi-Blind Full-Duplex Relay System with ICA Based Joint CFO Mitigation and Equalization
<u>Yufei Jiang</u> (University of Liverpool, United Kingdom); Xu Zhu (University of Liverpool, United Kingdom); Eng Gee Lim (Xi'an Jiaotong-Liverpool University, P.R. China); Yi Huang (University of Liverpool, United Kingdom); Zhongxiang Wei (University of Liverpool & School of EE and CS, United Kingdom); Hai Lin (Osaka Prefecture University, Japan)

Joint Channel Estimation and Feedback with Low Overhead for FDD Massive MIMO Systems

Linglong Dai (Tsinghua University, P.R. China); Zhen Gao (Tsinghua University, P.R. China); Zhaocheng Wang (Tsinghua University, P.R. China)

Hybrid Analog-Digital Beamforming for Multiuser MIMO Millimeter Wave Relay Systems

Xuan Xue (Xidian University, P.R. China); Tadilo Endeshaw Bogale (University of Western Ontario, Canada); Xianbin Wang (Western University, Canada); Yongchao Wang (Xidian University, P.R. China); Long Bao Le (INRS, University of Quebec, Canada)

An Improved Spectrum Sensing Algorithm Based on Energy Detection and Covariance Detection

Min Jia (Harbin Institute of Technology, P.R. China); Xue Wang (Harbin Institute of Technology, P.R. China); Fang Ben (Harbin Institute of Technology, P.R. China); Qing Guo (Harbin Institute of Technology, P.R. China); Xuemai Gu (Harbin Institute of Technology, P.R. China)

STC-1:

SESSION CHAIR: Zhi Quan (South University of Science and Technology of China, P.R. China)
Tuesday, 3 November, 2015. 11:00 am until 12:30 pm
ROOM: Firenze

Invited Paper: *Reputation-aware Incentive Mechanism for Participatory Sensing*

Jingyi Sun (University of macau, Macao); Fen Hou (University of Macau, Macao); Shaodan Ma (University of Macau, P.R. China)

User Selection for Cooperative Spectrum Sensing in Mobile Cognitive Radios

Meimei Duan (Beijing University of Posts and Communications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Caili Guo (Beijing University of Posts and Telecommunications, P.R. China); Fangfang Liu (Beijing University of Posts and Telecommunications, P.R. China)

Rapid Timing Synchronization of hybrid DS/FH system Based on Reed-Solomon Codes

Jiaqi Zhang (CNCERT, P.R. China); Luchen Zhang (CNCERT, P.R. China); Yukui Pei (Tsinghua University, P.R. China); Lidong Wang (CNCERT, P.R. China); Ning Ge (Tsinghua University, P.R. China)

Energy Efficient Coordinated Beamforming in Distributed Antenna Systems

Qiao Pang (Southeast University, P.R. China); Xiangyang Wang (Southeast University, P.R. China); Wangtao Wan (Southeast University, P.R. China); Yang Zhao (Southeast University, Nanjing City, Jiangsu Province, P.R. China); Xiaoteng Gu (Southeast University, P.R. China)

Energy-Efficient Task Offloading for Multiuser Mobile Cloud Computing

Yun Zhao (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Tianchu Zhao (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China)

WNM-1:

SESSION CHAIR: Tingting Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China)
Tuesday, 3 November, 2015. 14:00 am until 15:30
ROOM: Torino

Invited Paper: *Iterative H.264 Video Decoding Using Mutual Information Exchangeable DSTS and SP Modulation*

Nasru Minallah (University of Engineering and Technology, Pakistan); Nasir Ahmad (University of Engineering & Technology Peshawar, Pakistan); Amaad Khalil (UET Peshawar Pakistan, Pakistan)

Dynamic Social Feature-based Diffusion in Mobile Social Networks

Xiao Chen (Texas State University, USA); Kaiqi Xiong (Rochester Institute of Technology, USA)

Flow-Level Performance of Device-to-Device Underlaid OFDM Cellular Networks

Lei Lei (Beijing Jiaotong University, P.R. China); Huijian Wang (BUPT, Canada); Sherman Shen (University of Waterloo, Canada); Nan Cheng (University of Waterloo, Canada); Zhangdui Zhong (Beijing Jiaotong University, P.R. China)

An Efficient Hybrid VoD Broadcasting Scheme for Heterogeneous Receivers in Wireless Networks

Zhanwei Zhong (Tsinghua University, P.R. China); Wenming Yang (Tsinghua University, P.R. China); Zhixiong Ding (Tsinghua University, P.R. China); Xingjun Wang (Tsinghua University, P.R. China)

Exploiting the UEP Property of Polar Codes to Reduce Image Distortions Induced by Transmission Errors

Du Wei (Shenzhen University, P.R. China); Shengli Zhang (Shenzhen University, P.R. China); Ding Fan (Shenzhen University, P.R. China)

WARAS: An Adaptive WSN Multipath Selection Model Inspired by Metabolism Behaviors of Escherichia Coli

Weibing Gong (University of Science and Technology Beijing, P.R. China); Min Zhang (University of Science and Technology Beijing, P.R. China); Xiaolong Yang (University of Science and Technology Beijing, P.R. China); Jing Li (University of Science and Technology Beijing, P.R. China); Nan Zhang (University of Science and Technology Beijing, P.R. China); Keping Long (University of Science and Technology Beijing, P.R. China)

WNN-2:

SESSION CHAIR: Yejun He (Shenzhen University, P.R. China)
Tuesday, 3 November, 2015. 04:00 pm until 05:30 pm
ROOM: Verona

Invited Paper: *Resource Allocation in Device-to-Device Communication underlaid Cellular Network Using SCMA: An Opportunistic Approach*

Kepeng Zhao (Xidian University, P.R. China); Yan Shi (Xidian University, P.R. China); Yanpeng Dai (Xidian University, P.R. China); Lei Liu (Xidian University, P.R. China); Junyu Liu (Xidian University, P.R. China); Min Sheng (Xidian University, P.R. China); Jiandong Li (Xidian University, P.R. China)

Robust Clustering for Cognitive Radio Ad Hoc Networks with Group Mobility

Jianzhao Zhang (Nanjing Telecommunication Technology Institute, P.R. China); Hangsheng Zhao (Nanjing Telecommunication Technology Institute, P.R. China); Long Cao (Institute of Communications Engineering PLA University of Science and Technology, P.R. China); Yong Chen (Nanjing Telecommunication Technology Insititute, P.R. China)

User-Cell Association in Heterogeneous Small Cell Networks: A Context-Aware Approach

Zheng Chang (University of Jyväskylä, Finland); Liping Zhang (Yanshan University, P.R. China); Xijuan Guo (Yan Shan University, P.R. China); Zhenyu Zhou (North China Electric Power University & Waseda University, P.R. China); Tapani Ristaniemi (University of Jyväskylä, Finland)

Performance Analysis of IEEE 802.11 Cognitive Radio Ad Hoc Networks

Changchun Xu (Wuhan, P.R. China); Jianhua He (Aston University, United Kingdom)

Clustering-based Interference Management in Densely Deployed Femtocell Networks

Yujie Zhang (Nanjing University, P.R. China); Shaowei Wang (Nanjing University, P.R. China); Jinghong Guo (State Grid Smart Grid Research Institute, P.R. China)

WCS-1:
SESSION CHAIR: Hui Gao (Beijing University of Posts and Telecommunications, P.R. China)
Tuesday, 3 November, 2015. 11:00 am until 12:30 pm
ROOM: Milano

Invited Paper: *Distributed Massive MIMO Full Duplex Relay Network over Rician Fading Channels*
Yongzhi Li (Beijing Jiaotong University, P.R. China); Cheng Tao (Beijing Jiaotong University, P.R. China); Liu Liu (Bejing Jiaotong University, P.R. China); Lingwen Zhang (Beijing Jiaotong University, P.R. China)

Flexible Full-duplex Cognitive Radio Networks by Antenna Reconfiguration

Liwei Song (Peking University, P.R. China); Yun Liao (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China)

Two-Way Relaying with Differential MPSK Modulation in Virtual Full Duplexing System

Jie Fan (Northwestern Polytechnical University, P.R. China); Lixin Li (Northwestern Polytechnical University, P.R. China); Tao Bao (NWPU, France); Huisheng Zhang (Northwestern Polytechnical University, P.R. China)

Fast Antenna Selection Algorithm for Full-duplex MIMO Communication System

Zhongsheng Liu (Beijing University of Posts and Telecommunications, P.R. China); Yuanan Liu (Beijing University of Posts and Telecom, P.R. China); Fang Liu (Beijing University of Posts and Telecom, P.R. China)

Outage Probability of Multi-hop Full-Duplex DF Relay System over Nakagami-m Fading Channels

Shuai Han (Harbin Institute of Technology, P.R. China); Lei Chen (Harbin Institute of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China); Cheng Li (Memorial University of Newfoundland, Canada)

Secure Beamforming Design in Wiretap MISO Interference Channels

Jian Zhou (Beijing University of Posts and Telecommunications, P.R. China); Hui Gao (Beijing University of Posts and Telecommunications, P.R. China); Ruohan Cao (Beijing University of Posts and Telecommunications, P.R. China); Tiejun Lv (Beijing University of Posts and Telecommunications, P.R. China)

WCS-2
SESSION CHAIR: Lingyang Song (Peking University, P.R. China)
Tuesday, 3 November, 2015. 11:00 am until 12:30 pm
ROOM: Parma

Invited Paper: *Is Full Duplex Configuration Better than MIMO Spatial Multiplexing?*
Mingxin Zhou (Peking University, P.R. China); Hongyu Cui (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China); Yonghui Li (University of Sydney, Australia)

A Fixed Dataflow Sub-lattice based Parallel Reduction Algorithm for MIMO Detection

Kanglian Zhao (Nanjing University, P.R. China); Wenfeng Li (School of Electronic Science and Engineering, Nanjing University, P.R. China); Gongliang Liu (Harbin Institute of Technology, P.R. China); Bo Li (Harbin Institute of Technology at Weihai, P.R. China)

A Flexible Low-Complexity Robust THP Approach for MISO Downlinks with Imperfect CSI

Luechao Yuan (National University of Defence Technology, P.R. China); Gaojian Wang (RWTH-Aachen, Germany); Gerd H. Ascheid (RWTH Aachen University, Germany); Cang Liu (National University of Defence Technology, P.R. China); Zuocheng Xing (National University of Defence Technology, P.R. China)

A Novel Kronecker-Based Stochastic Model for Massive MIMO Channels

Shangbin Wu (Heriot-Watt University, United Kingdom); Chengxiang Wang (Heriot-Watt University, United Kingdom); el-Hadi M. Aggoune (University of Tabuk & Director of Sensor Networks and Cellular System (SNCS) Research Center, Saudi Arabia); Mohammed Alwakeel (University of Tabuk, Saudi Arabia); Yang Yang (Shanghai Reserach Center for Wireless Communication, P.R. China)

Robust Transceiver with Tomlinson-Harashima Precoding for QRD-based Multiuser MIMO Relaying Systems

Lingjun Kong (Nanjing University of Posts & Communications, P.R. China); Pingping Chen (Fuzhou University, P.R. China)

A Generic Non-Stationary MIMO Channel Model for Different High-Speed Train Scenarios

Ammar Ghazal (Heriot-Watt University, United Kingdom); Chengxiang Wang (Heriot-Watt University, United Kingdom); Liu Yu (Shandong University, P.R. China); Pingzhi Fan (Southwest Jiaotong Universityi, P.R. China); Mohamed khaled

Chahine (University of Damascus & Arab International University, Syria)

WCS-3:
SESSION CHAIR: Ying Jun (Angela) Zhang (The Chinese University of Hong Kong, Hong Kong)
Tuesday, 3 November, 2015. 02:00 pm until 03:30 pm
ROOM: Milano

Invited Paper: *Adaptive Inter-Cell Interference Cancellation in Heterogeneous Networks: Making Smart Use of Multiple Antennas at Base Stations*
Yingxiao Zhang (The Chinese University of Hong Kong, Hong Kong); Ying Jun (Angela) Zhang (The Chinese University of Hong Kong, Hong Kong)

Low Complexity Joint Beamforming and Power Splitting for Massive MIMO Multicasting SWIPT
Zhaohui Yue (Beijing University of Posts and Telecommunications, P.R. China); Hui Gao (Beijing University of Posts and Telecommunications, P.R. China); Chau Yuen (Singapore University of Technology and Design, Singapore); Tiejun Lv (Beijing University of Posts and Telecommunications, P.R. China); Jie Zeng (Tsinghua University, P.R. China)

Energy-Efficient Power Allocation with Spectrum Sensing in Cognitive Radio Networks
Ramnaresh Yadav (Indra Gandhi Delhi Technical University, India); Keshav Singh (National Central University, Taiwan); Ashwani Kumar (Indra Gandhi Delhi Technical University, India); Tanya Kumar (IGDTUW, India)

Energy-Efficient Medium Access Control over IEEE 802.11 Wireless Heterogeneous Networks
Mehmet Fatih Tuysuz (Harran University, Turkey); Murat Ucan (Harran University, Turkey); Dilek Ayneli (Harran University, Turkey)

Optimal Power Control for DF Cooperative Transmission over Rayleigh-Fading Channels
Liping Qian (Zhejiang University of Technology, P.R. China); Hang Wu (Zhejiang University of Technology, P.R. China); Yuan Wu (Zhejiang University of Technology, P.R. China)

Energy Efficiency Optimization for Full-Duplex Relaying with Hybrid Self-Interference Cancellation in 60 GHz Indoor Wireless Systems
Zhongxiang Wei (University of Liverpool & School of EE and CS, United Kingdom); Xu Zhu (University of Liverpool, United Kingdom); Sumei Sun (Institute for Infocomm Research, Singapore); Yi Huang (University of Liverpool, United Kingdom); Teng Ma (University of Liverpool, United Kingdom); Yufei Jiang (University of Liverpool, United Kingdom)

WCS-4:
SESSION CHAIR: Shushi Gu (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)
Tuesday, 3 November, 2015. 02:00 pm until 03:30 pm
ROOM: Parma

Invited Paper: *Benefit and Cost of Cross Sliding Window Scheduling For Low Latency 5G Turbo Decoding*
Dake Liu (Beijing Institute of Technology, P.R. China); Chaoyuan

Zuo (Beijing Institute of Technology, P.R. China); Zhenzhi Wu (Chinese Academic of Sciences & Beijing Institute of Technology, P.R. China)

Joint Clustering-based Resource Allocation and Power Control in Dense Small Cell Networks
Yalan Zhao (Beijing University of Posts and Telecommunications, Beijing, P.R. China); Hailun Xia (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Shie Wu (Beijing University of Posts and Telecommunications, P.R. China)

Resource Demand-Acquisition Matching Optimization for Small Cell Networks: A Distributed Learning Approach
Junfei Qiu (PLA University of Science and Technology, P.R. China); Cheng Ding (PLA University of Science and Technology, P.R. China); Zhiyong Du (PLA Academy of National Defense Information, P.R. China); Youming Sun (National Digital Switching System Engineering and Technological Research Center, P.R. China)

A Novel Anti-Jamming Scheme for Interference Alignment (IA)-Based Wireless Networks
Jing Guo (Dalian University of Technology, P.R. China); Nan Zhao (Dalian University of Technology, P.R. China); F. Richard Yu (Carleton University, Canada); Ming Li (Dalian University of Technology, P.R. China); Victor C.M. Leung (The University of British Columbia, Canada) Jing Guo (Dalian University of Technology, P.R. China); Nan Zhao (Dalian University of Technology, P.R. China); F. Richard Yu (Carleton University, Canada); Ming Li (Dalian University of Technology, P.R. China); Victor C.M. Leung (The University of British Columbia, Canada)

Power Allocation for Massive MIMO: Impact of Power Amplifier Efficiency
Yingchu Guo (University of Electronic Science and Technology of China, P.R. China); Junlin Tang (University of Electronic Science and Technology of China, P.R. China); Gang Wu (University of Electronic Science and Technology of China, P.R. China); Shaoqian Li (University of Electronic Science and Technology of China, P.R. China)

Joint Femtocell Clustering and Selective Beamforming for Interference Mitigation in Heterogeneous Networks
Deyue Zhang (Beijing University of Posts and Telecommunications, P.R. China); Hui Gao (Beijing University of Posts and Telecommunications, P.R. China); Xin Su (Tsinghua University, P.R. China); Tiejun Lv (Beijing University of Posts and Telecommunications, P.R. China)

WCS-5:
SESSION CHAIR: Lin Zhang (Sun Yat-sen University & SYSU-CMU Shunde International Joint Research Institute, P.R. China)
Tuesday, 3 November, 2015. 04:00 pm until 05:30 pm
ROOM: Milano

Invited Paper: *A Network Calculus Approach to Throughput Analysis of Stochastic Multi-Channel Networks*
Zhidu Li (Beijing University of Posts and Telecommunications, P.R. China); Yuehong Gao (Beijing University of Posts and Telecommunications, P.R. China); Pengxiang Li (Beijing University of Posts and Telecommunications, P.R. China); Lin

Sang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)

Low-latency TDMA Sleep Scheduling in Wireless Sensor Networks
Zihao Wang (Beijing University of Posts and Telecommunications, P.R. China); Jinlan Li (Beijing University of Posts and Telecommunications, P.R. China); Lin Kang (School of Electronic Engineering, Beijing University of Posts and Telecommunications & School of Electronic Information Engineering, Taiyuan University of Science and Technology, P.R. China); Chaowei Wang (Beijing University of Posts and Telecommunications & School of Electronics Engineering, P.R. China); Yinghai Zhang (Beijing University of Posts and Telecommunications, P.R. China)

Online Prediction Algorithm of the News' Popularity for Wireless Cellular Pushing
Huangqing Chen (Tsinghua University, P.R. China); Xiaofeng Zhong (Tsinghua University, P.R. China); Jian Sun (Tsinghua University, P.R. China); Jing Wang (EE. Tsinghua University, P.R. China)

Node Density and Connectivity of Multi-Channel Ad Hoc Cognitive Radio Networks
Dong Liu (Tongji University, P.R. China); Erwu Liu (Tongji University, P.R. China); Yi Ren (Tongji University, P.R. China); Zhengqing Zhang (Tongji University, P.R. China); Dong Wang (Tongji University, P.R. China); Rui Wang (Tongji University, P.R. China); Ping Wang (Tongji University, P.R. China); Fuqiang Liu (Tongji University, P.R. China); Chi Harold Liu (Beijing Institute of Technology, P.R. China)

User-Centric Base Station Clustering and Sparse Beamforming for Cache-Enabled Cloud RAN
Erkai Chen (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China)

STAC: Simultaneous Transmitting and Air Computing in Wireless Data Center Networks
Shengli Zhang (Shenzhen University, P.R. China); Xiugang Wu (Stanford University, USA); Ayfer Özgür (Stanford University, USA)

WCS-10:
SESSION CHAIR: Jia Yu (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)
Tuesday, 3 November, 2015. 02:00 pm until 03:30 pm
ROOM: Louge 1F

Invited Paper: *User Association Based on Cobb-Douglas Function in HetNets with Hybrid Energy Sources*
Hongzhang Xu (Beijing University of Posts and Telecommunications, P.R. China); Tiankui Zhang (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China)

The Practical Use of Ill-Posed Theory: Improved Dynamic Subcarrier Coordinated Interleaving OFDM System with Pre-equalization
Huaiyin Lu (Sun Yat-sen University, P.R. China); Lin Zhang (Sun

Yat-sen University & SYSU-CMU Shunde International Joint Research Institute, P.R. China); Zhiping Zhang (Wright State University, USA); Zhiqiang Wu (Wright State University, USA)

Structural Hole Based Link Addition for Capacity Enhancement in Scale-Free Networks
Dong Wang (Tongji University, P.R. China); Erwu Liu (Tongji University, P.R. China); Dong Liu (Tongji University, P.R. China); Xinyu Qu (Tongji University, P.R. China); Rufei Ma (Tongji University, P.R. China); Rui Wang (Tongji University, P.R. China); Ping Wang (Tongji University, P.R. China); Fuqiang Liu (Tongji University, P.R. China); Chi Harold Liu (Beijing Institute of Technology, P.R. China)

Generalized Queue-Aware Radio Resource Management: A Dynamic Programming Approach
Ning Wang (Zhengzhou University, P.R. China); Chen He (University of British Columbia, Canada); T. Aaron Gulliver (University of Victoria, Canada); Vijay Bhargava (University of British Columbia, Canada)

Joint Dynamic Point Blanking and ABS for ICIC in Cloud Cooperated Heterogeneous Network
Mei Wang (Beijing University of Posts and Telecommunications, P.R. China); Hailun Xia (Beijing University of Posts and Telecommunications, P.R. China); Chunyan Feng (Beijing University of Posts and Telecommunications, P.R. China)

Inter-symbol Bit Rearrangement for Cooperative Relay System
Jian Lan (Shanghai Research Center for Wireless Communications & Nanjing University of Science & Technology, P.R. China); Ting Zhou (Shanghai Research Center for Wireless Communications & Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, P.R. China); Hua Qian (Chinese Academy of Sciences, P.R. China); Xiong Lei (Beijing Jiaotong University, P.R. China)

Wednesday, 4 November, 2015

CCT-3:
SESSION CHAIR: Yanyan Shen (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China)
Wednesday, 4 November, 2015. 11:00 am until 12:30 pm
ROOM: Torino

Invited Paper: *Implementation of trellis shaping on LDPC Coded Modulation DSL Systems*
Jianhua Liu (Huawei Technologies Co., Ltd., P.R. China); Ruosi Liu (Huawei Technologies Co., Ltd, P.R. China); Bin Zhou (Huawei Technologies Co., Ltd., P.R. China)

Parametric Design Space Exploration for Optimizing QAM Based High-speed Communication
Shalina Percy Delicia George Ford (Karlsruhe Institute of Technology, Germany); Peter Figuli (Karlsruhe Institute of Technology, Germany); Juergen Becker (Karlsruhe Institute of Technology, Germany)

Queuing Enhancements for In-Vehicle Time-Sensitive Streams Using Power Line Communications
Yinjia Huo (The University of British Columbia, Canada); Qiang Zheng (Beijing University of Posts & Telecommunications, P.R. China); Zhengguo Sheng (University of Sussex, United Kingdom); Victor C.M. Leung (The University of British Columbia, Canada)

Victor C.M. Leung (The University of British Columbia, Canada)

Flooding and Node-wise RBP Sequentially Concatenated Decoder for LDPC Codes

Hua Zhou (Nanjing University of Information Science and Technology, P.R. China); Peng Li (Nanjing University of Information Science and Technology, P.R. China); Jiao Feng (Nanjing University of Information Scicence and Technology, P.R. China); Bo Ni (Nanjing University of Information Science and Technology, P.R. China)

Adaptive Demodulate-and-forward Relaying for Asymmetric Two-way Relay Channels

Jiachun Liao (Beijing Jiaotong University, P.R. China); Fanggang Wang (Beijing Jiaotong University, P.R. China); Dongping Yao (Beijing Jiaotong University, P.R. China); Lu Lu (The Chinese University of Hong Kong, Hong Kong)

CCT-4:
SESSION CHAIR: Peng Cheng (Zhejiang Univ., China)
Wednesday, 11:00-12:30, Ballroom-B

Power Allocation for Mixed Traffic Broadcast with Service Outage Constraint

Chuang Zhang, Pingyi Fan (Tsinghua University, P.R. China)

Delay-Optimal Buffer-Aware Probabilistic Scheduling with Adaptive Transmission

Xiang, Wei Chen (Tsinghua University, P.R. China)

More Results on the Joint Statistics of Partial Sums of Ordered Random Variates with Applications

Sung Sik Nam (Hanyang University, Korea); Sung Ho Cho (Hanyang University, Korea); Dae Hyeon Yim (Hanyang University, Korea); Seyeong Choi (Wonkwang University, Korea)

Cognitive Radio Enabled Reliable Transmission for Optimal Remote State Estimation in Multi-sensor Industrial Cyber-physical Systems

Ling Lyu (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Cunqing Hua (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)

Consensus with bounded controls for a class of linear systems with input saturation

Qingling Wang (Southeast University, P.R. China); Changyin Sun (Southeast University, P.R. China)

SMDP-based Resource Allocation for Video Streaming in Cognitive Vehicular Networks

Hongli He (Zhejiang University, P.R. China); Hangguan Shan (Zhejiang University, P.R. China); Aiping Huang (Zhejiang University, P.R. China); Long Sun (Zhejiang University, P.R. China)

PSC-2:
SESSION CHAIR: Haojin Zhu (Shanghai Jiaotong Univ., China)
Wednesday, 4 November, 2015. 02:00 -03:30 pm, Verona

Invited Paper: SmartSec: Secret Sharing-based Location-aware Privacy Enhancement in Smart Devices

Ben Bett (Shanghai Jiao Tong University, P.R. China); Xiaokuan

Zhang (Shanghai Jiao Tong University, P.R. China); Mengyuan Li (Shanghai Jiao Tong University, P.R. China); Qiyang Qian (Shanghai Jiao Tong University, P.R. China); Na Ruan (Shanghai Jiao Tong University, P.R. China); Haojin Zhu (Shanghai Jiao Tong University, P.R. China)

De-anonymizing Social Networks: Using User Interest as a side-channel

Shuying Lai (Shanghai Jiao Tong University, P.R. China); Huaxin Li (Shanghai Jiao Tong University, P.R. China); Haojin Zhu (Shanghai Jiao Tong University, P.R. China); Na Ruan (Shanghai Jiao Tong University, P.R. China)

New Threshold Anonymous Authentication for VANET

Jun Shao (Zhejiang Gongshang University, P.R. China); Rongxing Lu (Nanyang Technological University, Singapore); Xiaodong Lin (University of Ontario Institute of Technology, Canada); Cong Zuo (Zhejiang Gongshang University, P.R. China)

Privacy-Preserving Use of Genomic Data on Mobile Devices

Xiaosan Lei (Xidian University, P.R. China); Xiaoyan Zhu (Xidian University, P.R. China); Haotian Chi (Xidian University, P.R. China); Shunrong Jiang (Xidian University, P.R. China)

Cloud-Assisted Privacy-Preserving Genetic Paternity Test

Xiaosan Lei (Xidian University, P.R. China); Xiaoyan Zhu (Xidian University, P.R. China); Haotian Chi (Xidian University, P.R. China); Shunrong Jiang (Xidian University, P.R. China)

SNBD-2:
SESION CHAIR: Rongxing Lu (Nanyang Tech. Univ., Singapore)
Wednesday, 4 November, 2015. 04:00 -05:30 pm, Verona

EFPA: Efficient and Flexible Privacy-Preserving Mining of Association Rule in Cloud

Cheng Huang (Nanyang Technological University, Singapore); Rongxing Lu (Nanyang Technological University, Singapore)

Protecting Router Cache Privacy in Named Data Networking

Manfei Gao (Xidian University, P.R. China); Xiaoyan Zhu (Xidian University, P.R. China); Yang Su (Xidian University, P.R. China)

Characterizing the Delay Performance of Web-based Cloud Services in a Browser-Scripting Approach

Chengwei Zhang (Huazhong University of Science & Technology, P.R. China); Xiaojun Hei (Huazhong University of Science and Technology, P.R. China); Wenqing Cheng (Huazhong University of Science and Technology, P.R. China)

MRMS: a MOEA-based Replication Management Scheme for Cloud Storage System

Kangxian Huang, Dagang Li (Peking University, P.R. China)

SPC-3:
SESION CHAIR: Guan Gui (NJUPT, P.R.China)
Wednesday, 4 November, 2015. 02:00-03:30 pm, Torino

Invited Paper: A Multiscale Compressed Video Saliency Detection Model Based on Ant Colony Optimization

Cuiwei Li (Beijing University of Posts and Telecommunications, P.R. China); Qin Tu (Beijing University of Posts and Telecommunications, P.R. China); Maozheng Zhao (Beijing

University of Posts and Telecommunications, P.R. China); Jun Xu (Beijing University of Posts and Telecommunications, P.R. China); Aidong Men (Beijing University of Posts and Telecommunications, P.R. China)

Modulation Classification of Mixed Signals using Independent Component Analysis
Qian Gao (Beijing University of Posts and Telecommunications, P.R. China); Sai Huang (Beijing University of Posts and Telecommunications, P.R. China); Lu Wang (Beijing University of Posts and Telecommunications, P.R. China); Kun Wang (Beijing University of Posts and Telecommunications, P.R. China); Yifan Zhang (Beijing University of Posts and Telecommunications, P.R. China); Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China)

Combined Centralized and Distributed Resource Allocation for Green D2D Communications
Zhenyu Zhou (North China Electric Power University & Waseda University, P.R. China); Mianxiong Dong (Muroran Institute of Technology, Japan); Zheng Chang (University of Jyväskylä, Finland); Bo Gu (Waseda University, Japan)

Efficient Resource Allocation for OFDMA-based Device-to-Device Communication Underlaying Cellular Networks
Wentao Zhao (Nanjing University, P.R. China); Shaowei Wang (Nanjing University, P.R. China); Jinghong Guo (State Grid Smart Grid Research Institute, P.R. China)

Energy Efficient Resource Allocation in Heterogeneous Software Defined Network: A Reverse Combinatorial Auction Approach
Di Zhang (University of Jyväskylä, Finland); Zheng Chang (University of Jyväskylä, Finland); Mikhail Zolotukhin (University of Jyväskylä, Finland); Timo Hämäläinen (University of Jyväskylä, Finland)

Video Saliency Detection Based On Mutual Information And Background Prior In Compressed Domain
Jun Liu (Beijing University of Posts and Telecommunications, P.R. China); Ran Gao (Beijing University of Posts and Telecommunications, P.R. China); Maozheng Zhao (Beijing University of Posts and Telecommunications, P.R. China); Yanping Lu (Beijing University of Posts and Telecommunications, P.R. China); Aidong Men (Beijing University of Posts and Telecommunications, P.R. China)

STC-2:
SESION CHAIR: Dawei Liu (Xi'an Jiaotong-Liverpool University, P.R. China)
Wednesday, 4 November, 2015. 11:00 am until 12:30 pm
ROOM: Tivoli

Invited Paper: A Low Complexity Two-stage Precoding and User Grouping Scheme for Full-Dimension MIMO Systems
Hua Tian (Xi'an Jiaotong University, P.R. China); Gangming Lyu (Xi'an Jiaotong University, P.R. China); Guomei Zhang (Xi'an Jiaotong University, P.R. China); Fei Xiang (R&D Center of ZTE Corporation, P.R. China)

Adaptive Multi-Band Resource Allocation for Wireless Power and Information Transmission

Zidong Han (South University of Science and Technology of China, P.R. China); Yue Zhang (South University of Science and Technology of China, P.R. China); Yi Gong (South University of Science and Technology of China, P.R. China); Zhi Quan (South University of Science and Technology of China, P.R. China)

Joint optimization on bundle and segment sizes for multi-hop delivery in space Disruption-Tolerant Network
Zhixiang Zhong (HITsz, P.R. China); Zhihua Yang (Harbin Institute of Technology, P.R. China); Yunhe Li (Zhaoqing University, P.R. China); Peng Yuan (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)

XOR Network Coding for Data Mule Delay Tolerant Networks
Qiankun Su (University of Toulouse, France); Katia Jaffrès-Runser (University of Toulouse, France); Gentian Jakllari (University of Toulouse, France); Charly Poulliat (INP - ENSEEIHT Toulouse, France)

An Improved IEEE 802.15.6 Password Authenticated Association Protocol
Xin Huang (Xi'an Jiaotong-Liverpool University, P.R. China); Dawei Liu (Xi'an Jiaotong-Liverpool University, P.R. China); Jie Zhang (Xi'An Jiaotong-Liverpool University, P.R. China)

WNM-3:
SESION CHAIR: Lin Gao (The Chinese University of Hong Kong, Hong Kong)
Wednesday, 4 November, 2015. 04:00 pm until 05:30 pm
ROOM: Torino

Invited Paper: Multipath-aided Passive Localization using Inaccurate Receiver based on Factor Graph
Ganlin Hao (Beijing Institute of Technology, P.R. China); Nan Wu (Beijing Institute of Technology, P.R. China); Yongliang Li (Beijing Institute of Technology, P.R. China); Hua Wang (Beijing Institute of Technology, P.R. China)

Multi-access Selection with Attractor Selection Algorithm in Heterogeneous Network
Huan Wu (Beijing University of Posts and Telecommunications, P.R. China); Xiang Ming Wen (Beijing University of posts and telecommunications, P.R. China); Zhaoming Lu (BUPT, P.R. China); Qi Pan (Beijing University of Posts and Telecommunications, P.R. China)

A low-complexity probabilistic routing algorithm for polar orbits satellite constellation networks
Xinmeng Liu (Beijing University of Posts and Telecommunications, P.R. China); Zhuqing Jiang (Beijing University of Posts and Telecommunications, P.R. China); Chonghua Liu (China Acdemy of Space Technology, P.R. China); Shanbao He (China Academy of Space Technology, P.R. China); Chao Li (Beijing University of Posts and Telecommunications, P.R. China); Yuying Yang (Beijing University of Posts and Telecommunications, P.R. China); Aidong Men (Beijing University of Posts and Telecommunications, P.R. China)

Joint Channel and Queue Aware Scheduling for Wireless Links with Multiple Fading States
Juan Liu (HKUST, P.R. China); Wei Chen (Tsinghua University, P.R. China); Khaled B. Letaief (The Hong Kong University of Science

and Technology, Hong Kong)

QoS Demands Splitting for RAT Selection in Heterogeneous Networks

Yichen Yao (Shanghai Jiao Tong University, P.R. China); Ruijia Sun (Shanghai Jiao Tong University, P.R. China); Xiaoying Gan (Shanghai Jiao Tong University, P.R. China); Jingchao Wang (China Electronic Equipment System Engineering Company, P.R. China); Xiaohua Tian (Shanghai Jiao Tong University, P.R. China)

WCS-6:

SESION CHAIR: Wenyi Zhang (University of Science and Technology of China, P.R. China)
Wednesday, 4 November, 2015. 11:00 am until 12:30 pm
ROOM: Milano

Invited Paper: *Delay Analysis in Static Poisson Network*
Yi Zhong (University of Science and Technology of China, P.R. China); Wenyi Zhang (University of Science and Technology of China, P.R. China); Martin Haenggi (University of Notre Dame, USA)

Low Latency Communication for Internet of Things

Shao-Chou Hung (National Taiwan University, Taiwan); David Liau (National Taiwan University, Taiwan); Shao-Yu Lien (National Formosa University, Taiwan); Kwang-Cheng Chen (National Taiwan University, Taiwan)

Performance Analysis for Multi-Carrier System Based on Stochastic Network Calculus

Pengxiang Li (Beijing University of Posts and Telecommunications, P.R. China); Yuehong Gao (Beijing University of Posts and Telecommunications, P.R. China); Zhidu Li (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)

Pricing-Based Spectrum Leasing for Cognitive Networks with Channel Quality Diversity

Feng Li (Zhejiang University of Technology, P.R. China); Hao Luo(Zhejiang University, P.R. China); Min Jia (Harbin Institute of Technology, P.R. China); Li Wang (Zhejiang University of Technology, P.R. China); Hua Jingyu (Zhejiang University of Technology, P.R. China); Xin Liu (Nanjing University of Aeronautics and Astronautics, P.R. China); Weidang Lu (Zhejiang University of Technology, P.R. China)

Game theory based resource sharing algorithm for massive MIMO HetNets

Tianyi Zhao (Beijing University of Posts and Telecommunications, P.R. China); Jiandong Sun (Beijing University Of Posts and Telecommunications, P.R. China); Zhenhui Liu (Beijing University of Posts and Telecommunications, P.R. China); Fengye Zhang (Beijing University of Posts and Telecommunications, P.R. China)

An Adaptive Resource Allocation Scheme for Device-to-Device Communication Underlaying Cellular Networks

Foad Hajiaghajani (Amirkabir University of Technology, Iran); Mehdi Rasti (Amirkabir University of Technology, Iran)

WCS-7:

SESION CHAIR: Peng Hui Tan (Institute for infocomm Research, Singapore)
Wednesday, 4 November, 2015. 11:00 am until 12:30 pm
ROOM: Verona

Invited Paper: *A 3-D RSS Distribution Model Based on Statistical Properties for Indoor Localization Systems*
Chang Zhao (Shanghai Jiao Tong University, P.R. China); Tuo Yu (Shanghai Jiaotong University, P.R. China); Xiaohua Tian (Shanghai Jiao Tong University, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); Xiaoying Gan (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China)

Expectation Maximization-Based Passive Localization in Asynchronous Wireless Networks

Weijie Yuan (Beijing Institute of Technology, P.R. China); Nan Wu (Beijing Institute of Technology, P.R. China); Tianfeng Cheng (Beijing Institute of Technology, P.R. China); Hua Wang (Modern Comm. Lab, P.R. China); Jingming Kuang (Beijing Institute of Technology, P.R. China)

An Energy-accuracy Tradeoff Scheme Based on Optimal Communication Policy for HetNet-based Indoor Localization Framework

Jun Xia (Shanghai Jiao Tong University, P.R. China); Xu Chaojie (Shanghai JiaoTong University, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); Liu Zhongling (Shanghai Jiao Tong University, P.R. China)

A Low Complexity NLOS Error Mitigation Method in UWB Localization

Qiang Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China); Dengkang Zhao (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China); Shaojun Zuo (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China); Tingting Zhang (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China); Dan Ma (Harbin Institute of Technology, Shenzhen Graduate School, P.R. China)

System Design and Performance Evaluation for Power Domain Non-Orthogonal Multiple Access

Shan Yang (Technology Innovation Center, China Telecom Co. Ltd., P.R. China); Peng Chen (Technology Innovation Center, China Telecom Co. Ltd., P.R. China); Lin Liang (Technology Innovation Center, China Telecom, P.R. China); Qi Bi (Technology Innovation Center, China Telecom Corp. Ltd, P.R. China); Fengyi Yang (Technology Innovation Center, China Telecom Corp. Ltd, P.R. China)

AP based Traffic Steering for LTE-Wi-Fi networks

Sumei Sun (Institute for Infocomm Research, Singapore); Peng Hui Tan (Institute for Infocomm Research, Singapore); Yuan Zhou (Institute for Inforcomm Research, Singapore); Koichi Adachi (Institute for Infocomm Research (I2R), Singapore); Maodong Li (Institute for Infocomm Research, Singapore)

WCS-8:

SESION CHAIR: Xiaojun Yuan (ShanghaiTech University, P.R. China)
Wednesday, 4 November, 2015. 02:00 pm until 03:30 pm
ROOM: Milano

Invited Paper: *An Improved Repeated Correlation Delay Shift Keying Modulation Scheme for Chaotic Communication System*
Jintian Shen (Sun Yat-sen University, P.R. China); Weiwei Rao (Sun Yat-sen University, P.R. China); Wenjun Zhang (Sun Yat-sen University, P.R. China); Lin Zhang (Sun Yat-sen University & SYSU-CMU Shunde International Joint Research Institute, P.R. China); Zhiqiang Wu (Wright State University, USA)

Exploiting Both Statistical and Stale CSIT for Linear Precoding in MISO Broadcast Channel
Ruixin He (Xian Jiaotong University, P.R. China); Jing Xu (Xi'an Jiaotong University, P.R. China); Xinmin Luo (School of Electronics and Information Engineering, Xi'an Jiaotong University, P.R. China); Ya Zhang (Xi'an Jiaotong University, P.R. China); Zhenzhen Gao (Xi'an Jiaotong University, P.R. China)

Three-dimensional Space-Time Shift Keying with Coordinate Combination and Joint Optimisation
Guangtao Zheng (Sun Yat-sen University, P.R. China); Ming Jiang (Sun Yat-sen University, P.R. China)

Performance of Ring-TCM codes over Two-way Relay Fading Channels using Linear Physical-layer Network Coding
Zichao Sun (Sun Yat-sen University, P.R. China); Li Chen (Sun Yat-sen University, P.R. China); Xiaojun Yuan (ShanghaiTech University, P.R. China)

Analysis of Physical-layer Network Coding over Asymmetric Two-way Relay Channel with Carrier Frequency Offset
Shouxin Zong (University of Chinese Academy of Sciences, P.R. China); Shaoshuai Gao (University of Chinese Academy of Sciences, P.R. China)

Design Principles for Simultaneous Wireless Information and Power Transmission Systems
Wensheng Zhang (Shandong University, P.R. China); Chengxiang Wang (Heriot-Watt University, United Kingdom); Xiaotian Zhou (Shandong University, P.R. China); Xiaofeng Tao (Beijing University of Posts and Telecommunications, P.R. China)

WCS-9:

SESION CHAIR: Shengli Zhang (Shenzhen University, P.R. China)
Wednesday, 4 November, 2015. 04:00 pm until 05:30 pm
ROOM: Milano

Invited Paper: *Approximate Message Passing for Sparse Recovering of Spatially and Temporally Correlated Data*
Yangqing Li (Beijing University of Posts and Telecommunications, P.R. China); Wei Chen (Beijing Jiaotong University, P.R. China); Changchuan Yin (Beijing University of Posts and Telecommunications, P.R. China); Zhu Han (University of Houston, USA)

Per-Antenna Constant Envelope Precoding for Secure Transmission in Large-Scale MISO Systems
Jun Zhu (University of British Columbia, Canada); Ning Wang (Zhengzhou University, P.R. China); Vijay Bhargava (University of British Columbia, Canada)

Energy-Efficient Resource Allocation in Multiuser Decode-and-Forward Relay Networks
Keshav Singh (National Central University, Taiwan); Ramnaresh Yadav (Indra Gandhi Delhi Technical University, India); Ashwani Kumar (Indra Gandhi Delhi Technical University, India)

Finite Length Buffer Relaying based Incremental Hybrid Decode-amplify-forward Cooperative System
Peihao Dong (Shandong University, P.R. China); Zhiquan Bai (Shandong University, P.R. China); Yingyan Su (School of Information Science & Engineering, Shandong University, P.R. China); Shen Gao (Shandong University, P.R. China); Xiaotian Zhou (Shandong University, P.R. China); Chengxiang Wang (Heriot-Watt University, United Kingdom)

Dynamic Sleep Control in Green Relay-Assisted Networks for Energy Saving and QoS Improving
Fang Chen (Shanghai Jiao Tong University, P.R. China); Bo Yang (Shanghai Jiao Tong University, P.R. China); Qiaoni Han (Shanghai Jiao Tong University, P.R. China); Cailian Chen (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)

Enhanced Effective SNR Prediction for LTE Downlink
Kaixiong Zhou (Sun-Yat-sen University & University of Science and Technology of China, P.R. China); Lin Zhang (Sun Yat-sen University & SYSU-CMU Shunde International Joint Research Institute, P.R. China); Ming Jiang (Sun Yat-sen University, P.R. China)

WELCOME
RECEPTION

Monday, November 2, 18:30 at Poolside (2F)

Conference
BANQUET

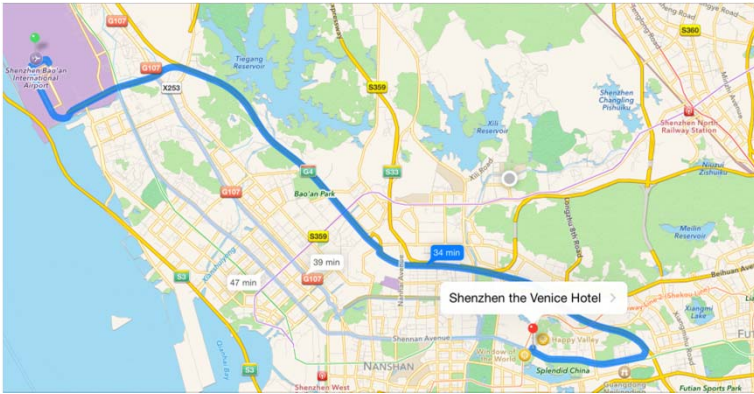**Tuesday, November 3, 18:30 at Splendid China**

Poolside, Venice Hotel

TianYiGe Restaurant, Splendid China

MAPS

It takes about 40 minutes from Shenzhen Bao'an International Airport to Venice Hotel by taxi, costing about 100RMB.
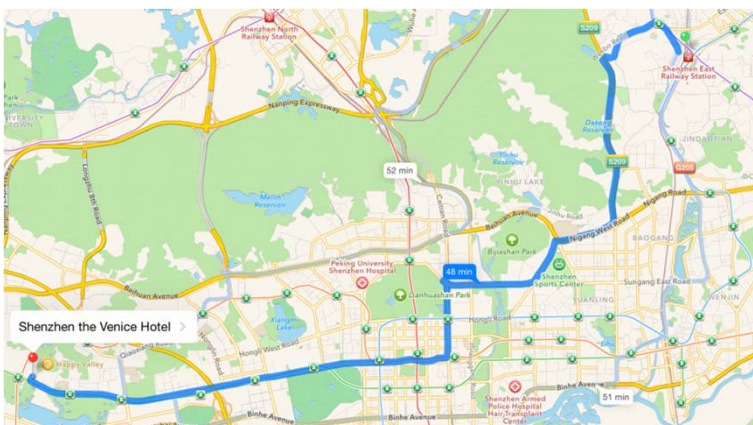You can also take metro Line 1 to the station of Window of The World.

It takes about 30 minutes from Shenzhen Railway Station to Venice Hotel by taxi, costing about 60RMB.
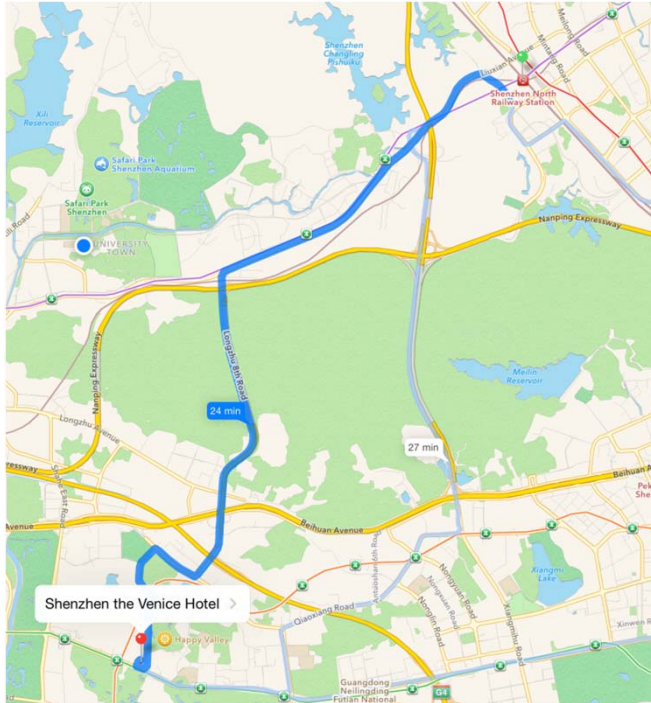You can also take metro Line 1 to the station of Window of The World (**Recommended**).
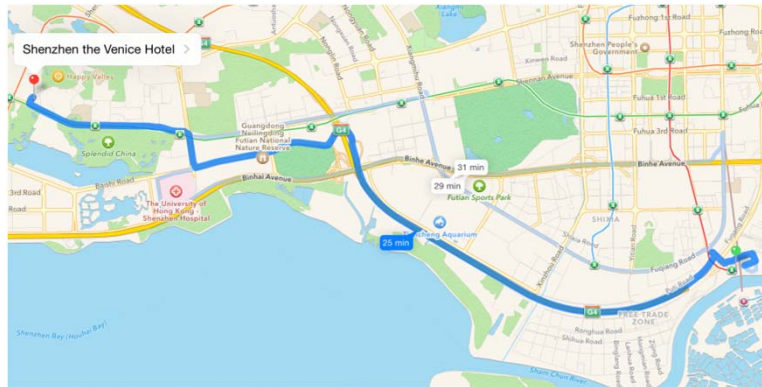
It takes about 50 minutes from Shenzhen East Railway Station to Venice Hotel by taxi, costing about 120RMB.
You can also take metros, and make transfers to the station of Window of The World.

It takes about 25 minutes from Shenzhen North Railway Station to Venice Hotel by taxi, costing about 70RMB.

You can also take metros, and make transfers to the station of Window of The World.

If you enter into Shenzhen via Hongkong, then you can reach the Venice Hotel by taxi at Futian Checkpoint Station, costing about 70RMB.

You can also take metros, and make transfers to the station of Window of The World.
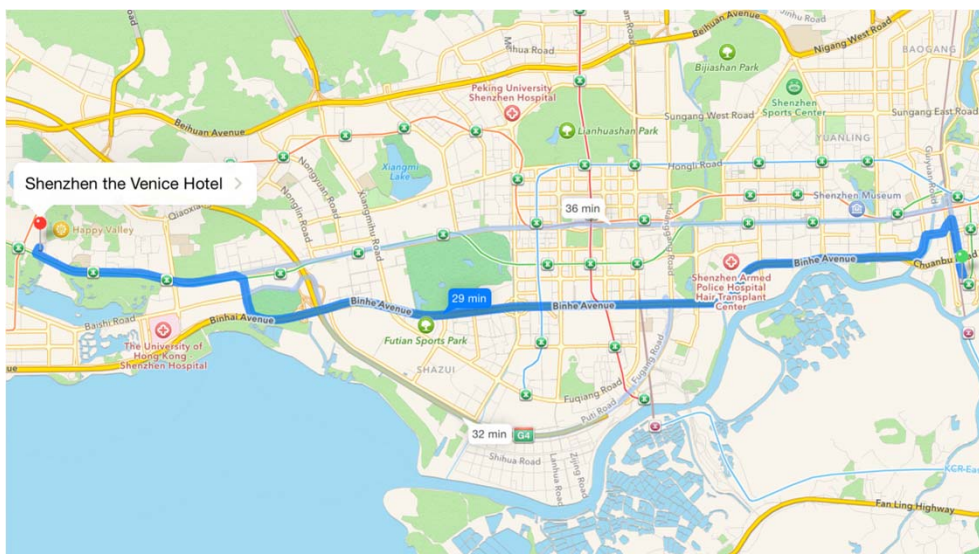
Hotels around the conference venue
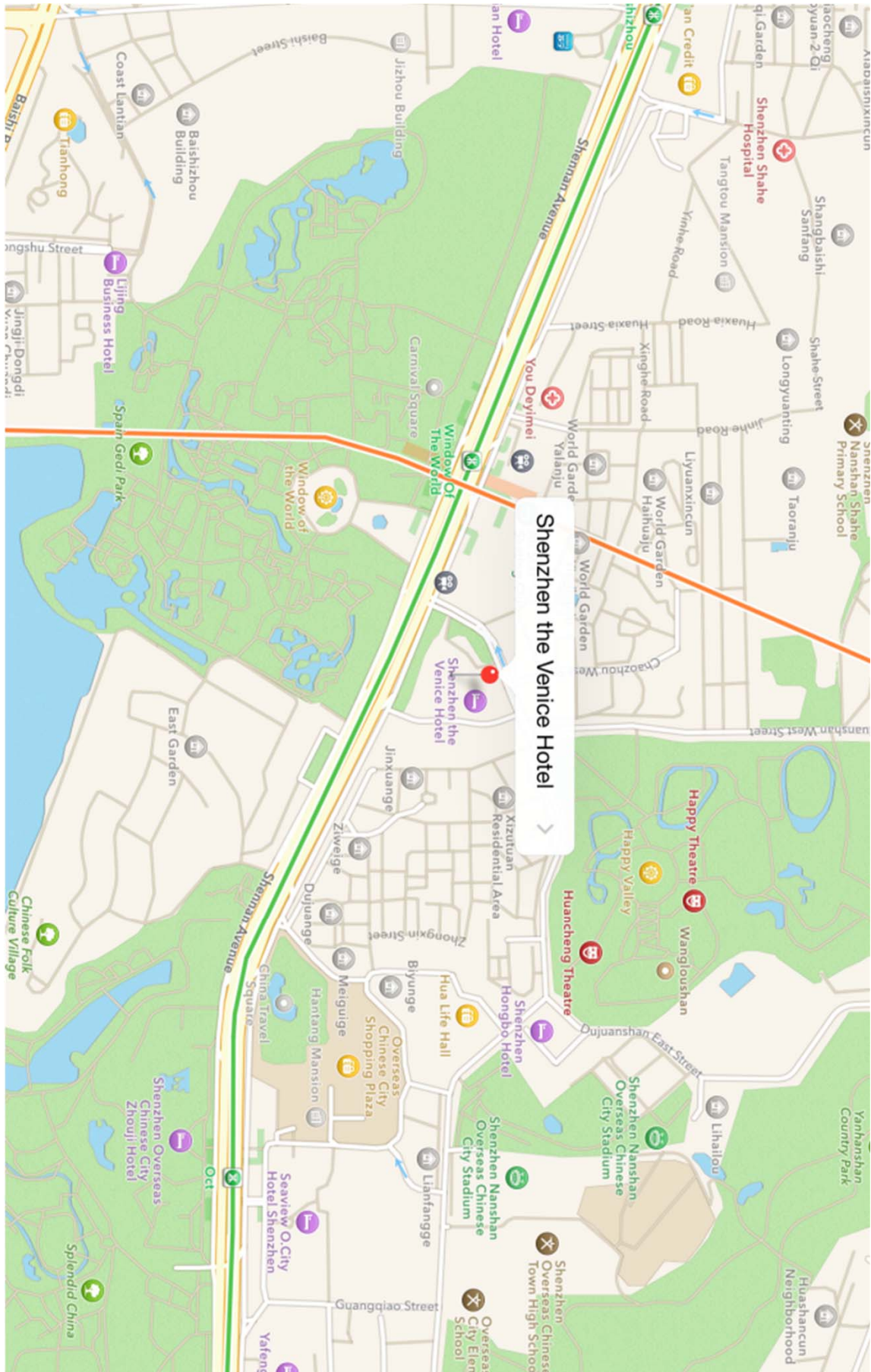
Shenzhen

Shenzhen is a major city in Guangdong Province, with a nice sub-tropical climate and beautiful beaches, China. Situated immediately north of Hong Kong Special Administrative Region, the area became China's first and one of the most successful Special Economic Zones. It currently also holds sub-provincial administrative status, with powers slightly less than a province. According to the Government report for 2014, Shenzhen had a population of 10,628,900 people in the city with an area of 2,020 square kilometers, and a metropolitan area population of over 18 million. The world has witnessed an economic miracle in Shenzhen. The small fishing village 30 years ago has now turned into a modern metropolis with good infrastructures and an important base for hi-tech industries and advanced manufacturing. Shenzhen is a major manufacturing center in China. In the 1990s, Shenzhen was described as constructing "one highrise a day and one boulevard every three days". The Shenzhen's rapidly growing skyline is regarded as one of the best in the world. Shenzhen is home to some of China's most successful high-tech companies, such as HUAWEI, ZTE, KONKA, SKYWORTH, TENCENT and LENOVO. The city also provides good services in real estate development, travel, and finance.


1. Window of The World
Window of the World is a theme park located in the western part of Shenzhen city, featuring miniature-scale famous landmarks of the world. Here you can see vivid replicas of the world's wonders, historical heritages and famous scenic sites. The entire masterpiece is built at ratios of 1:1, 1:5 or 1:15. There about 130 reproductions of some of the most famous tourist attractions in the world squeezed into 48 hectares. Including the 108-metertal Eiffel Tower dominating the skyline, the sight of the Pyramids, the Taj Mahal, the Ancient Athens, the Leaning Tower of Pisa and the Tower of London, etc. There are also a wide selection of international restaurants and mini exhibitions on famous figures from world history. Window of the World allows you to taste Mexican food, see the Niagara Falls then wander around Angkor Wat. The site takes at least half a day to explore and every day ends with a firework and laser show. Skiing and snow tubing are available at the 'Alps Indoor Skiing'. In the evening, visitor can enjoy 'Fervorous Paris Nights' Show at 'Caesar's Palace'.

2. Happy Valley (Happy Kingdom)
Covering a total area of 350,000 square meters, the Happy Valley in Shenzhen is a modern theme park with maximum investment and most advanced facilities in China. As a national AAAAA tourist site, it has hosted over 30 million visitors from all over the word since its opening in 1998. The whole Shenzhen Happy Valley is made up of nine entertainment zones on different themes, namely, Spanish Square, Cartoon Town, Adventure Mountain, Happy Island, Gold Mine Town, Shangri-la Wood, Typhoon Bay, Sunshine Coast, and Maya Water Park, with over 100 entertainment items suitable for almost all ages.
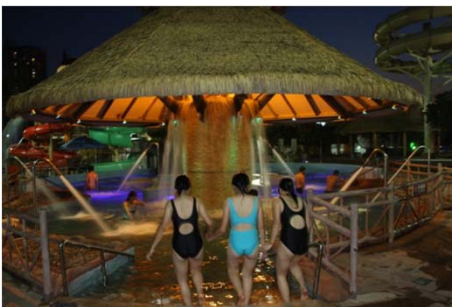
3. OCT East Resort

Located along the beautiful coast of South China Sea and Shenzhen Bay, Shenzhen OCT Resort gathers the most concentrated cultural theme park cluster, cultural-themed hotel cluster and culture & art facility cluster in China on the six-square-kilometer land with blooming flowers and flourishing trees all the year round. It is among China's first batch of 5A Tourist Attractions, National Civilization Scenic Area and National Cultural Industry Demonstrative Park, serving as a shinning and colorful business card for the joyous city of Shenzhen.

4. Splendid China

Splendid China is an attraction at the Overseas Chinese Town, Shenzhen that has scaled down replicas of China's historical buildings, wonderful scenes and folk customs. The scale models are in the main in a ratio of 1:15 and the exhibits are positioned to replicate their geographical locations. Here you can see replicas of many of the most famous Chinese buildings and landmarks and a great deal of attention has been paid to detail so as to ensure the miniatures truly represent their originals. This has entailed making full use of the services of architectural specialists and landscape experts who are actively engaged with research and conservation at the actual sites that have been replicated here. The exhibits are surrounded by pleasant gardens with many flowers and trees. Consequently walking there can be very relaxing. Apart from the miniature buildings and scenic spots, one may see over 50,000 ceramic figures in the different locations. Splendid China is divided into two parts, a Scenic Spot Area and a Comprehensive Service Area.

5. Xichong Beach

Xichong is a scenic spot in the Longgang District of Shenzhen City, located in the southern part of the Dapeng Peninsula, facing the South China Sea with Mirs Bay on the west and Daya Bay on the East. Xichong attracts tourists mainly because of its long beach and surf. It is in eastern Shenzhen in the Dapeng National Park, a popular recreational and scenic part of the city. In 2006 Chinese National Geographic named the Dapeng Peninsula as one of the ten most beautiful parts of China. To its north is the Qiniang Mountain, the second highest mountain in the city. Since this is one of the least populated and most remote parts of Shenzhen, it is not easy to access Xichong Beach. Private cars can be hired in Dapeng or Nao'ao, and regular buses travel from these towns to Dongchong and Xichong Beaches (M231 and M232). There is also a popular hiking trail running down the coast between Xichong and Dongchong (approx 10 km). Xichong and its sister beach Dongchong are popular with backpackers, hikers and surfers.