WCSP 2017

IEEE

2017 9th International Conference on Wireless Communications and Signal Processing

Final Program

October 11-13, 2017, Nanjing, China

IEEE ComSoc
IEEE Communications Society

Welcome Message from the General Chair

On behalf of the organizing committee, it is my great pleasure to invite you to participate in the 2017 9th International Conference on Wireless Communications and Signal Processing (WCSP 2017), which will be held in Nanjing, Jiangsu Province, China, on Oct. 11-13, 2017.

WCSP is an annual International Conference on Wireless Communications and Signal Processing. The aim of the conference is to provide an international forum that brings together researchers from academia and practitioners from industry to exchange advances in recent research work on all aspects of wireless communications and signal processing. With the support of all participants, the past eight events of the conference have been very successful. We are now organizing WCSP 2017, the ninth event of the conference, which has obtained the technical co-sponsorship of the IEEE and IEEE Communications Society. The organizing committee and technical program committee of the conference are working hard to develop a high-quality technical program and make the conference a greater success. You are cordially welcome to participate in and contribute to the conference in your valuable role.

Located in the eastern part of China, Nanjing is the capital of Jiangsu Province and an important central city on the middle and lower reaches of the Yangtze River. Nanjing is also one of the most well-known historic and cultural cities in China, and has many tourism attractions around the city. I hope that you will take this opportunity to visit the beautiful Nanjing city, and enjoy the amazing scenic spots and historic sites in Nanjing.

Thank you. I look forward to welcoming you in Nanjing in October 2017.

Prof. Xiaohu You
General Chair, WCSP 2017
Southeast University, P. R. of China

Welcome Message from the TPC Chairs
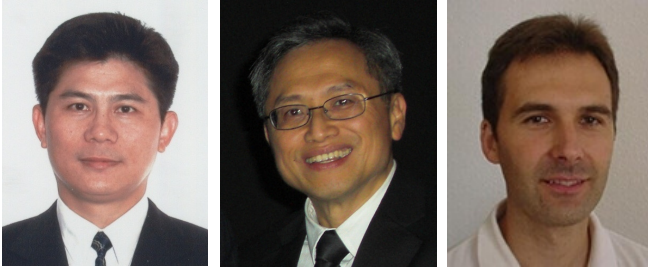
On behalf of the technical program committee, it is our great pleasure to welcome you all to the 2017 9th International Conference on Wireless Communications and Signal Processing (WCSP 2017).

WCSP 2017 consists of six symposia, including the Ad Hoc and Sensor Networking Symposium, Communication Theory symposium, Signal Processing Symposium, Wireless Communications Symposium, Wireless Networking Symposium, and Wireless Network Security Symposium. The technical program committee consists of 675 members from all over the world. We received totally 820 paper submissions from 15 countries and regions, which were put into the review process, and each submission was carefully peer-reviewed by at least three reviewers in the areas. After a rigorous review process, 328 submissions have been selected for inclusion in the technical program and presentation at in the conference, which is equivalent to an acceptance ratio of 40%.

The technical program of WCSP 2017 includes six keynote speeches and 56 technical sessions, which cover a diversity of topics in the areas of wireless communications and signal processing. The keynote speeches will be delivered by Dr. Wen Tong from Huawei Technologies, Prof. Robert Heath from The University of Texas at Austin, Prof. Andreas F. Molisch from the University of Southern California, Prof. David Gesbert from EURECOM, Prof. Tom Hou from Virginia Tech, and Ness B. Shroff from The Ohio State University. All keynote speakers are world-wide renowned leading researchers in the areas of wireless communications and signal processing. We hope that you will find the technical program interesting, informative, and stimulating.

The technical program would not have been possible without the efforts of all symposium co-chairs, TPC members, and external reviewers who volunteered their time and professional expertise. We take this opportunity to thank all of them for their hard work and great help. We also thank all the authors who have submitted their papers and contributed their quality work to this conference. Moreover, we thank PLA Army Engineering University, Nanjing University of Posts and Telecommunications, Zhejiang University, and University of Science and Technology of China, as well as our technical co-sponsors and patrons, IEEE, IEEE Communications Society, IEEE Communications Society Nanjing Chapter, IEEE Signal Processing Society Nanjing Chapter, IEEE Vehicular Technology Society Nanjing Chapter, CIC Communications and Signal Processing Society, and National Instruments for their support and contributions.

Finally, we hope that you will enjoy the technical program of the conference and wish you all a pleasant stay at the conference and in the amazing city, Nanjing.

Jun Zheng, Nirwan Ansari, and Pascal Lorenz
WCSP 2017 Technical Program Committee Co-Chairs

WCSP 2017 Technical Program at a Glance

WCSP 2017 Technical Program on Oct. 11, 2017							
08:30-09:00	**Opening and Welcome Ceremony** (Grand Ballroom)						
09:00-09:50	Keynote Plenary 1: **Key Technology Challenges for 5G and Beyond** **Dr. Wen Tong**, IEEE Fellow, CTO, Wireless Network Huawei Technologies Co., Ltd., China (Grand Ballroom)						
09:50-10:40	Keynote Plenary 2: **Communications in High-Mobility Environments** **Prof. Andreas F. Molisch**, IEEE Fellow University of Southern California, USA (Grand Ballroom)						
10:40-11:10	Coffee Break						
11:10-12:00	Keynote Plenary 3: **Pushing the Capacity Envelope of Wireless Networks: Opportunities and Challenges** **Prof. Tom Hou**, IEEE Fellow Virginia Tech, USA (Grand Ballroom)						
12:00-14:00	Lunch						
	Unique Room	Perseverance Room	Revolution Room	Knowledge A Room	Knowledge B Room	Zijin Room	Alliance Room
14:00-15:30	AHSNS-01: Mobile Ad Hoc Networks	CTS-01: Coding and Modulation	SPS-01: Multimedia Signal Processing (I)	WCS-01: Channel Models	WCS-02: Interference Alignment	WNS-01: Resource Allocation (I)	WNSS-01: Physical Layer Security (I)
15:30-16:00	Coffee Break						
16:00-17:30	AHSNS-02: Wireless Sensor Networks	CTS-02: Coding and Detection	SPS-02: Multimedia Signal Processing (II)	WCS-03: Relaying	WCS-04: Resource Allocation (I)	WNS-02: Resource Allocation (II)	WNSS-02: Physical Layer Security (II)
18:30-21:00	Welcome Reception (Grand Ballroom)						

WCSP 2017 Technical Program on Oct. 12, 2017							
08:30-09:30	Keynote Plenary 4: **Millimeter Wave MIMO Signal Processing** **Prof. Robert W. Heath**, IEEE Fellow The University of Texas at Austin, USA (Grand Ballroom)						
09:30-10:30	Keynote Plenary 5: **Learning from the Sky: Flying Access Networks for beyond 5G** **Prof. David Gesbert**, IEEE Fellow EURECOM, France (Grand Ballroom)						
10:30-11:00	Coffee Break						
11:00-12:00	Keynote Plenary 6: **Minimizing Latency in Cloud Based Systems: Coding Over Parallel Servers** **Prof. Ness B. Shroff**, IEEE Fellow The Ohio State University, USA (Grand Ballroom)						
12:00-14:00	Lunch						
	Unique Room	Perseverance Room	Revolution Room	Knowledge A Room	Knowledge B Room	Zijin Room	Alliance Room
14:00-15:30	AHSNS-03: Localization	CTS-03: Transmission and Multiple Access	SPS-03: Signal Processing for Localization	WCS-05: Resource Allocation (II)	WCS-06: Power Control	WNS-03: Radio Access Networks	WNSS-03: Jamming and Secure Transmission
15:30-16:00	Coffee Break						
16:00-17:30	AHSNS-04: Sensing and Estimation	CTS-04: Performance Analysis	SPS-04: Array Signal Processing	WCS-07: OFDM and Multi-Carrier	WCS-08: Detection and Estimation	WNS-04: Data Caching (I)	WNSS-04: Privacy and Content Protection
18:30-21:00	Banquet (Grand Ballroom)						

WCSP 2017 Technical Program on Oct. 13, 2017

	Unique Room	Perseverance Room	Revolution Room	Knowledge A Room	Knowledge B Room	Zijin Room	U Lake Room
8:30-10:00	AHSNS-05: Wireless Network Analysis	SPS-05: Beamforming for MIMO Systems	SPS-06: Signal Processing for MIMO and Radar Systems	WCS-09: NOMA (I)	WCS-10: Massive MIMO (I)	WNS-05: Data Caching (II)	WNSS-05: Wireless Network Security
10:00-10:30	Coffee Break						
10:30-12:00	WCS-11: NOMA (II)	SPS-07: Resource Allocation for Communication Systems	SPS-08: Interference Suppression and Multiplexing	WCS-12: Massive MIMO (II)	WCS-13: Massive MIMO (III)	WNS-06: Routing and Grouping	WCS-14: mmWave
12:00-14:00	Lunch						
14:00-15:30	WCS-15: NOMA (III)	SPS-09: Signal Processing Emerging for Communication Systems	SPS-10: Estimation and Detection (I)	WCS-16: Massive MIMO-Channel Estimation	WCS-17: Massive MIMO-Detection	WNS-07: Scheduling and QoS	WCS-18: Visible Light Communication
15:30-16:00	Coffee Break						
16:00-17:30	WCS-19: Cooperative MIMO and DAS	SPS-11: Estimation and Detection (II)	SPS-12: Emerging Signal Processing and Its applications	WCS-20: HetNets	WCS-21: System and Network Design	WNS-08: Software Defined Networks	WCS-22: System Performance Analysis
	End						

Keynote Speakers

Wen Tong, Chief Technology Officer, Wireless Network, IEEE Fellow

Huawei Technologies Co., Ltd, China

Key Technology Challenges for 5G and Beyond

Abstract

As 5G became a global-scale dominant mobile technology to drive the digital transformation for all business and industries, the implementation and development of 5G network infrastructure to meet all the requirements for 5G defined by ITU remains a technology challenge. In this talk, we present the open issues and state-of-art solutions in the three key use-cases for 5G: (1) emBB (2) URLLC (3) mMTC; unlike the previous generation of wireless networks, 5G will address the diverse technologies spanning from cellular frequency to mmWave frequency, from global coverage macro-cell networks to hot-spot UDN, from consumer based internet access to industrial grade cyber-physical tactile internet, from purpose designed networks to software defined virtualized networks. These challenges will continue to drive the landscape for 5G and beyond, as such, we will present a deep-dive into two enablers, i.e., spectral efficiency and end-to-end network slicing.

Biography

Dr. Wen Tong is the Huawei Fellow, CTO, Huawei Wireless. Since 2010, Dr. Tong is the vice president of Huawei wireless research. In 2011, He was appointed the Head of Communications Technologies Labs of Huawei. Currently, he spearheads to lead Huawei's 5G wireless technologies research and development. Prior to joining Huawei in March 2009, Dr. Tong was the Nortel Fellow and global head of the Network Technology Labs at Nortel. He joined the Wireless Technology Labs at Bell Northern Research in 1995. He had pioneered fundamental technologies from 1G to 4G wireless with 350 granted US patents.

Dr. Tong was elected as a Huawei Fellow and an IEEE Fellow. In 2014, he was the recipient of IEEE Communications Society Industry Innovation Award for "the leadership and contributions in development of 3G and 4G wireless systems". Dr. Tong serves as Board of Director of WiFi Alliance and he is the fellow of Canadian Academy of Engineering.

Andy F. Molisch, Professor, IEEE Fellow

University of Southern California, USA

Communications in High-Mobility Environments

Abstract

Communication in high-mobility environments will be one of the main applications for fifth-generation cellular systems. High-speed trains (HST) and V2X (vehicle-to-vehicle as well as vehicle-to-infrastructure) communications will find

applicants both for passenger convenience (video streaming etc.) and safety-critical control signalling for trains and cars. This talk will first review the unique characteristics of high-mobility environments and propagation channels. These will motivate to re-consider modulation and multiple access methods. We will discuss the tradeoffs between spreading (whitening) and localized transmission in the time-frequency plain, and discuss OTFS, a new modulation format especially suited for high-mobility scenarios.

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. He subsequently was with AT&T (Bell) Laboratories Research (USA); Lund University, Lund, Sweden, and Mitsubishi Electric Research Labs (USA). He is now a Professor and Solomon-Golomb – Andrew-and-Erna-Viterbi Chair at the University of Southern California, Los Angeles. His current research interests are the measurement and modeling of mobile radio channels, multi-antenna systems, ultra-wideband communications and localization, novel modulation and multiple access systems, and wireless video distribution. He has authored, coauthored, or edited four books (among them the textbook Wireless Communications, Wiley-IEEE Press), 19 book chapters, more than 200 journal papers, some 300 conference papers, as well as more than 80 patents and 70 standards contributions.

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 is a Fellow of the National Academy of Inventors, Fellow of the AAAS, Fellow of the IEEE, Fellow of the IET, an IEEE Distinguished Lecturer, and a member of the Austrian Academy of Sciences. He has received numerous awards, among them the Donald Fink Prize of the IEEE, and the Eric Sumner Award of the IEEE.

Oct. 11, 2017, 11:10am-12:00pm, Room: Grand Ballroom

Tom Hou, Professor, IEEE Fellow
Virginia Tech, USA

Pushing the Capacity Envelope of Wireless Networks: Opportunities and Challenges

Abstract

Over the past fifteen years, we have witnessed a phenomenal growth in wireless data communications. On the demand side, the use of wireless handheld devices for data applications has become pervasive. On the technology side, various advanced communication technologies have been developed and employed to improve network capacity. Some of the new technologies include cognitive radio, massive MIMO, full duplex, mmWave, among others. Although it is well known that these technologies can improve point-to-point throughput performance, it remains unclear what performance one can expect in a complex network environment. A fundamental exploration of this question is important not only for gaining new theoretical understanding, but also is critical for the design of algorithms and network protocols in the field. In this talk, we explore the challenges in the modeling and optimization of these new physical layer technologies in a network environment with the goal of pushing the capacity envelop at the network level.

Biography

Tom Hou is the Bradley Distinguished Professor of Electrical and Computer Engineering at Virginia Tech, USA. His research interests are to develop innovative solutions to complex cross-layer optimization problems in wireless networks. He is particularly interested in exploring new limits of network performance by exploiting advances at the physical layer and other new enabling technologies.

Prof. Hou was named an IEEE Fellow for contributions to modeling and optimization of wireless networks. He has published two textbooks: Cognitive Radio Communications and Networks: Principles and Practices (Academic Press/Elsevier, 2009) and Applied Optimization Methods for Wireless Networks (Cambridge University Press, 2014). The first book has been selected as one of the Best Readings on Cognitive Radio by the IEEE Communications Society. Prof. Hou's research was recognized by five best paper awards from the IEEE and two paper awards from the ACM. He holds five U.S. patents.

Prof. Hou is a prominent leader in the research community. He was an Area Editor of IEEE Transaction on Wireless Communications (Wireless Networking area), and an Editor of IEEE Transactions on Mobile Computing, IEEE Journal on Selected Areas in Communications – Cognitive Radio Series, and IEEE Wireless Communications. Currently, he is an Editor of IEEE/ACM Transactions on Networking and ACM Transactions on Sensor Networks. He is the Steering Committee Chair of IEEE INFOCOM conference – the largest and top ranked conference in networking. He is a member of the Board of Governors as well as a Distinguished Lecturer of the IEEE Communications Society.

Oct. 12, 2017, 8:30am-9:30am, Room: Grand Ballroom

Robert W. Heath, Professor, IEEE Fellow
The University of Texas at Austin, USA

Millimeter Wave MIMO Signal Processing

Abstract

Millimeter wave has become an incubator for the rebirth of MIMO communication. It has many applications, as a core 5G technology, and also as a conduit for emerging applications of wireless to fixed access, vehicular, aerial, and wearable networks. In this talk, I explain why communication at millimeter wave - and even higher frequencies - is interesting from a signal processing perspective. I first describe the three differentiating features of communication at millimeter wave: larger arrays, new channel models, and power constraints. Then I explain how these features impact the formulation and solution of traditional MIMO signal processing problems like beamforming, precoding, and channel estimation. I describe the signal processing challenges associated with fast antenna array configuration. In particular, I highlight how out-of-band information, sensing, and machine learning algorithms can reduce the overhead in tasks such as adaptive channel estimation and beamforming. I conclude with directions for future research.

Biography

Robert W. Heath Jr. received the Ph.D. in EE from Stanford University. He is a Cullen Trust for Higher Education Endowed Professor in the Department of Electrical and Computer Engineering at The University of Texas at Austin and a Member of the Wireless Networking and Communications Group. He is also the President and CEO of MIMO Wireless Inc and Chief Innovation Officer at Kuma Signals LLC. Prof. Heath is a recipient of the 2012 Signal Processing Magazine Best Paper

award, a 2013 Signal Processing Society best paper award, the 2014 EURASIP Journal on Advances in Signal Processing best paper award, and the 2014 Journal of Communications and Networks best paper award, the 2016 IEEE Communications Society Fred W. Ellersick Prize, and the 2016 IEEE Communications Society and Information Theory Society Joint Paper Award. He authored "Introduction to Wireless Digital Communication" (Prentice Hall in 2017) and "Digital Wireless Communication: Physical Layer Exploration Lab Using the NI USRP" (National Technology and Science Press in 2012). He co-authored "Millimeter Wave Wireless Communications" (Prentice Hall in 2014). He is a licensed Amateur Radio Operator, a registered Professional Engineer in Texas, and is a Fellow of the IEEE.

Oct. 12, 2017, 9:30am-10:30am, Room: Grand Ballroom

David Gesbert, Professor, IEEE Fellow
EURECOM, France

Learning from the sky: Flying access networks for beyond 5G

Abstract

The use of flying robots (drones) carrying radio transceiver equipment is the new promising frontier in our quest towards ever more flexible, adaptable and spectrally efficient wireless networks. Beyond obvious challenges within regulatory, control, navigation, and operational domains, the deployment of autonomous flying radio access network (Fly-RANs) also come with a number of exciting new research problems such as the issue of optimal automatic placement of the drones in non-trivial propagation scenarios (i.e. scenarios where the optimal placement is not just dictated by a trivial geometry argument due to shadowing effects, e.g. in cities). We present several different approaches, lying at the cross-roads between machine learning, signal processing and optimization. One approach involves the reconstruction of a city map from sampled radio measurements which can have application beyond the realm of communications.

Biography

David Gesbert (IEEE Fellow) is Professor and Head of the Communication Systems Department, EURECOM. He obtained the Ph.D degree from Ecole Nationale Superieure des Telecommunications, France, in 1997. From 1997 to 1999 he has been with the Information Systems Laboratory, Stanford University. He was then a founding engineer of Iospan Wireless Inc, a Stanford spin off pioneering MIMO-OFDM (now Intel). D. Gesbert has published about 270 papers and 25 patents, some winning the 20015 IEEE Best Tutorial Paper Award (Communications Society), 2012 SPS Signal Processing Magazine Best Paper Award, 2004 IEEE Best Tutorial Paper Award (Communications Society), 2005 Young Author Best Paper Award for Signal Proc. Society journals, and several conference best paper awards. He was recently a Technical Co-chair for ICC2017 in Paris. He was named in the 2014 Thomson-Reuters List of Highly Cited Researchers in Computer Science. Since 2015, he holds the ERC Advanced grant "PERFUME" on the topic of smart device Communications in future wireless networks. He held visiting professor positions in KTH (2014) and TU Munich (2016). Since 2017 he is also a visiting Academic Master within the Program 111 at the Beijing University of Posts and Telecommunications. He is a Professor in the Joint BUPT-EURECOM Open5G Lab.

Ness B. Shroff, Professor, IEEE Fellow
The Ohio State University, USA

Minimizing Latency in Cloud Based Systems: Coding Over Parallel Servers

Abstract

We are in the midst of a major data revolution. The total data generated by humans from the dawn of civilization until the turn of the new millennium is now being generated every two days. Driven by a wide range of data-intensive devices and applications, this growth is expected to continue its astonishing march, and fuel the development of new and larger data centers. In order to exploit the low-cost services offered by these resource-rich data centers, application developers are pushing computing and storage away from the end-devices and instead deeper into the data-centers. Hence, the end-users' experience is now dependent on the performance of the algorithms used for data retrieval within the data-centers. In particular, providing low-latency services is critically important to the end-user experience for a wide variety of applications. Our goal has been to develop the analytical foundations and methodologies to enable cloud computing and storage solutions that result in low-latency services. A variety of cloud based systems can be modeled using multi-server, multi queue queuing systems with data locality constraints. In these systems, replication (or most sophisticated coding schemes) can be used to not only improve reliability but to also reduce latency. However, delay optimality for multi-server queuing systems has been a long-standing open problem, with limited results usually in asymptotic regimes. The key question is can we design resource allocation schemes that are near optimal in distribution for minimizing several different classes of delay metrics that are important in wireless web and cloud based services? In this talk, I will overview some of our recent research efforts at solving this problem, provide some key design principles, and outline a set of what I believe are important open problems.

Biography

Ness B. Shroff received his Ph.D. degree in Electrical Engineering from Columbia University in 1994. He joined Purdue university immediately thereafter as an Assistant Professor in the school of ECE. At Purdue, he became Full Professor of ECE in 2003 and director of CWSA in 2004, a university-wide center on wireless systems and applications. In July 2007, he joined The Ohio State University, where he holds the Ohio Eminent Scholar endowed chair in Networking and Communications, in the departments of ECE and CSE. He holds or has held visiting (chaired) professor positions at Tsinghua University, Beijing, China, Shanghai Jiaotong University, Shanghai, China, and the Indian Institute of Technology, Bombay, India. Dr. Shroff is currently an editor at large of IEEE/ACM Trans. on Networking, a senior editor of the IEEE Transactions on Control of Networked Systems and an editor of the IEEE Networks Magazine. He has received numerous best paper awards for his research, most notably he received the IEEE INFOCOM best paper awards in 2006, 2008, and 2016, and runner up awards in 2005 and 2013. He also received the best paper of the year in the journal of Communication and Networking (2005) and in Computer Networks (2003). In addition, his papers have received the best student paper award (from all papers whose first author is a student) at ACM Sigmetrics 2017, IEEE WIOPT 2013, IEEE WiOPT 2012, and IEEE IWQoS 2006. Dr. Shroff is on the list of highly cited researchers from Thomson Reuters ISI (previously ISI web of Science) in 2014 and 2015, and in Thomson Reuters Book on The World's Most Influential Scientific Minds in 2014. He also received the IEEE INFOCOM achievement award for seminal contributions to scheduling and resource allocation in wireless networks.

AHSNS-01: Mobile Ad Hoc Networks

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Unique
Chair: Changle Li, Xidian University, P.R. China

1. **In-Car Shopping: A Data Dissemination Scheme for Vehicular Networks in Urban Areas**
   Chen Chen, Cong Wang, Guoxian Zhang and Zhiyuan Ren (Xidian University, P.R. China); Jingjing Ma (Central South University, P.R. China)

2. **An Efficient Adaptive Frame Aggregation Scheme in Vehicular Ad Hoc Networks**
   Kui Liu and Changle Li (Xidian University, P.R. China)

3. **HTTP Message Response Time on Destination Node-Driven Routing for Social MANET**
   Koichi Hirai and Kazumasa Takami (Soka University, Japan)

4. **A Task Assignment Algorithm Based on Particle Swarm Optimization and Simulated Annealing in Ad-hoc Mobile Cloud**
   Bonan Huang, Weiwei Xia, Yueyue Zhang, Jing Zhang, Qian Zou, Feng Yan, Lianfeng Shen (Southeast University, P.R. China)

5. **A Spectrum Penetration Assisted MAC Protocol for Vehicular Communication Networks**
   Yu Zhang, Cailian Chen, Jianping He and Xinping Guan (Shanghai Jiao Tong University, P.R. China)

6. **BLE-Horn: A Smartphone-based Bluetooth Low Energy Vehicle-to-Pedestrian Safety System**
   Mengfei Wu, Bojiao Ma, Zhenyu Liu, Lingyan Xiu, and Lin Zhang (Beijing University of Posts and Telecommunications, P.R. China)

CTS-01: Coding and Modulation

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Perseverance
Chair: Nan Liu, Southeast University, P.R. China

1. **Distance Spectrum and Optimized Design of Concatenated Polar Codes**
   Minzi Xu, Peiyao Chen, Baoming Bai and Sheng Tong (Xidian University, P.R. China)

2. **Photograph QC-LDPC Codes Design for Multi- Level Cell Flash Memories**
   Lingjun Kong (Nanjing University of Posts and; Telecommunications, P.R. China); Jun Li (Nanjing University of Science and Technology, P.R. China); Pingping Chen (Fuzhou University, P.R. China); Shunwai Zhang (Nanjing University of Posts and Telecommunications, P.R. China)

3. **An Algebraic Approach to Design Low Rate Low Density Parity Check Code**
   Zhe Zhang, Liang Zhou, Junyi Du and Shenglong Peng (University of Electronic Science and Technology of China, P.R. China)

4. **Construction of Multiple-Rate LDPC Codes Using Modified PEG**
   Tengfei Chu, Xueqin Jiang (Donghua University, P.R. China); Jia Hou (Soochow University, P.R. China); Huiming Wang (Xi'an Jiaotong University, P.R. China); Lingjun Kong (Nanjing University of Posts and Telecommunications, P.R. China)

5. **A Universal Interleaver Design for Bit-Interleaved QC-LDPC Coded Modulation**
   Xiaojian Liu and Yuejun Wei (Huawei Technologies, P.R. China); Ming Jiang (Southeast University, P.R. China)

6. **Multilevel Polar-Coded Modulation Based on Cooperative Relaying**
   Xuan Ma, Lixin Li, Meng Zhu (Northwestern Polytechnical University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Zhu Han (University of Houston, USA)

SPS-01: Multimedia Signal Processing (I)

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Revolution
Chair: Xin Wei, Nanjing University of Posts and Telecommunications, P.R. China

1. **Supervised and Semi-supervised Speech Enhancement Using Weighted Nonnegative Matrix Factorization**
   Xia Zou (PLA Army Engineering University, P.R. China); Yonggang Hu (Australian National University, Australia); Xiongwei Zhang (PLA Army Engineering University, P.R. China)

2. **Expression Recognition in the Wild with Transfer Learning**
   Tian Xia, Yifeng Zhang, Yuan Liu and Yibo Sun (Southeast University, P.R. China)

3. **Deformable Deep Convolutional Generative Adversarial Network in a Microwave Based Hand Gesture Recognition System**
   Jiajun Zhang and Zhiguo Shi (Zhejiang University, P.R. China)

4. **Limited-view CT Reconstruction Based on Autoencoder-like Generative Adversarial Networks with Joint Loss**
   Qingjiang Wu and Xiubin Dai (Nanjing University of Posts and Telecommunications, P.R. China)

5. **Decision Tree Based Fast CU Partition for HEVC Lossless Compression of Medical Image Sequences**
   Dongdong Zhang, Xiaojing Duan and Di Zang (Tongji University, P.R. China)

6. **ISAR 2-D Imaging Under Low SNR Based on Improved Compressive Sensing**
   Jie Xia, Xinfei Lu and Weidong Chen (University of Science and Technology of China, P.R. China)

WCS-01: Channel Models

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Knowledge A
Chair: Yu Liu, Shandong University, P.R. China

1. **Cluster-based Geometrical Dynamic Stochastic Model for MIMO Scattering Channels**
   Xiukun Xie, Zaichen Zhang, Hao Jiang, Jian Dang, Liang Wu (Southeast University, P.R. China)

2. **Algorithm for Modeling Dual-Polarized MIMO Channel in Land Mobile Satellite Communications**
   Xin Wang and Chenhao Qi (Southeast University, P.R. China)

3. **Non-Stationary Mobile-to-Mobile Channel Modeling Using the Gauss-Markov Mobility Model**
   Ruisi He and Bo Ai (Beijing Jiaotong University, P.R. China); Gordon Stüber (Georgia Institute of Technology, USA); Zhangdui Zhong (Beijing Jiaotong University, P.R. China)

4. **A 3-D HAP-MIMO Channel Model Based on Dynamic Properties of Scatterers**
   Jingge Hu, Lingge Jiang, Chen He, Zhuxian Lian and Jing Liu (Shanghai Jiao Tong University, P.R. China)

5. **New Deterministic and Statistical Simulation Models for Non-Isotropic UAV-MIMO Channels**
   Yiran Li and Xiang Cheng (Peking University, P.R. China)

6. **High-precision multiple-antenna Indoor Positioning System based on Chirp Signal**
   Congchao Wang, Zaichen Zhang, Liang Wu, Jian Dang (Southeast University, P.R. China)

WCS-02: Interference Alignment

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Knowledge B
Chair: Nan Zhao, Dalian University of Technology, P.R. China

1. **Protocol-Sequence-Based Media-Access Control with Successive Interference Cancellation** (Invited Paper)
   Kenneth W. Shum (The Chinese University of Hong Kong, Hong Kong); Yi Chen (The Chinese University of Hong Kong Shenzhen, P.R. China); Yuan-Hsun Lo (Xiamen University, P.R. China); Wing Shing Wong (The Chinese University of Hong Kong, P.R. China); Yijin Zhang (Nanjing University of Science and Technology, P.R. China)

2. **Beneficial Jamming Design for Interference Alignment Networks**
   Jing Guo and Yang Cao (Dalian University of Technology, P.R. China); Zhutian Yang (Harbin Institute of Technology, P.R. China); Nan Zhao (Dalian University of Technology, P.R. China); F. Richard Yu (Carleton University, Canada); Yunfei Chen (University of Warwick, UK); Victor C.M. Leung (University of British Columbia, Canada)

3. **Hedonic Coalition Formation Game for Clustered Interference Alignment**
   Fan Zhao, Pengcheng Zhu, Jiamin Li and Xiaohu You (Southeast University, P.R. China)

4. **Topology Attribute and Global Resource-Driven Virtual Network Embedding Algorithm via Novel Node-Ranking Approach**
   Haotong Cao and Longxiang Yang (Nanjing University of Posts and Telecommunications, P.R. China)

5. **Congestion-aware User-centric Cooperative Base Station Selection in Ultra-dense Networks**
   Mengying Zhang and Xiumei Yang (Shanghai Research Center for Wireless Communications, SIMIT, P.R. China); Tianheng Xu (Shanghai Advanced Research Institute, Chinese Academy of Sciences, P.R. China); Ming-Tuo Zhou (Shanghai Research Center for Wireless Communications, SIMIT, P.R. China)

6. **Embedding Virtual Networks Using a Novel Node-Ranking Approach via Exploiting Topology Attributes and Global Network Resources**
   Haotong Cao, Longxiang Yang and Hongbo Zhu (Nanjing University of Posts and Telecommunications, P.R. China)

WNS-01: Resource Allocation (I)

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Zijin
Chair: Sihai Zhang, University of Science and Technology of China, P.R. China

1. **Underlay Spectrum Sharing with Spatially Random Users and Cooperative Wireless Power Transfer**
   Chao Zhai (Shandong University, P.R. China); He Chen (University of Sydney, Australia); Xinhua Wang (Qingdao University, P.R. China); Ju Liu (Shandong University, P.R. China)

2. **User Pairing and Channel Allocation for Full-Duplex Self-Organizing Small Cell Networks**
   Qi Zhang, Qingwei Du and Kun Zhu (Nanjing University of Aeronautics and Astronautics, P.R. China)

3. **Multi-Objective Resource Allocation in NOMA Cognitive Radios Based on a Practical Non-linear Energy Harvesting Model**
   Yuhao Wang, Yuhang Wu, and Fuhui Zhou (Nanchang University, P.R. China); Yongpeng Wu (Shanghai Jiao Tong University, P.R. China); Zheng Chu (Middlesex University, UK); Yingjiao Wang (Nanchang University, P.R. China)

4. **QoE-aware Resource Allocation Scheme in the OFDMA-based Cognitive Radio Network with Imperfect CSI Consideration**
   Xixi Jin, Lei Xie and Huifang Chen (Zhejiang University, P.R. China)

5. **Effective Resource Consumption in Cellular Networks Based on Batch Latency Update**
   Juma Saidi Ally, Wen Wang, Sihai Zhang and Wuyang Zhou (University of Science and Technology of China, P.R. China)

6. **Spectrum Sensing Interval Optimization and Power Control for Energy Efficient Cognitive Radio Networks**
Boyang Liu and Guangyue Lu (Xi'an University of Posts and Telecommunications, P.R. China); Zan Li (Xidian University, P.R. China); Fuhui Zhou (Nanchang University, P.R. China)

WNSS-01: Physical Layer Security (I)

Date: Oct. 11, 2017
Time: 14:00pm – 15:30pm
Room: Alliance
Chair: Yi Qian, University of Nebraska Lincoln, USA

1. **Physical Layer Security in Heterogeneous Cellular Networks: A Spatio-Temporal Perspective**
Bing Wang (National Digital Switching System Engineering and Technological Research Center, P.R. China); Chunguo Li (Southeast University, P.R. China); Kaizhi Huang (Information Engineering University, P.R. China); Xiaoming Xu (PLA Army Engineering University, P.R. China); Yi Wang (Zhengzhou University of Aeronautics, P.R. China)

2. **Physical Layer Security in IoT: A Spatial-Temporal Perspective**
Shuai Zhang, Jianhua Peng, and Kaizhi Huang (National Digital Switching System Engineering and Technological Research Center, P.R. China); Xiaoming Xu (Army Engineering University, P.R. China); Zhou Zhong (National Digital Switching System Engineering and Technological Research Center, P.R. China)

3. **Physical Layer Security in D2D Communication System Underlying Cellular Networks**
Lei Wang, Yi Shi, Mingkai Chen, Jingwu Cui and Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China)

4. **Physical Layer Secure Binary Signature Design for Wiretap CDMA Systems**
Guangyu Ti, Ming Li, Xiaowen Tian, Zihuan Wang, Hongyu Li and Qian Liu (Dalian University of Technology, P.R. China)

5. **Physical Layer Security of Non-orthogonal Multiple Access in Cognitive Radio Networks**
Zhongwu Xiang, Yueming Cai, Weiwei Yang, and Xiaoli Sun (PLA Army Engineering University, P.R. China); Yingbo Hu (Troops 75841, PLA, P.R. China)

6. **Hybrid Cache Placement for Improving Physical Layer Security in Cooperative Networks**
Fang Shi, Dongqing Xie, and Weiqiang Tan (Guangzhou University, P.R. China); Xianfu Lei (Southwest Jiaotong University, P.R. China); Lisheng Fan (Guangzhou University, P.R. China)

AHSNS-02: Wireless Sensor Networks

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Unique
Chair: Lin Zhang, Beijing University of Posts and Telecommunications, P.R. China

1. **SADO: State-Associated and Delay-Oriented Data Collection for Intertidal WSNs**

Xinyan Zhou, Yushi Cheng and Xiaoyu Ji (Zhejiang University, P.R. China); Wenyuan Xu (University of South Carolina, USA)

2. **Communication Protocol with Network Coding in Long-chain Wireless Sensor Networks**
Gang Qi and Lin Zheng (Guilin University of Electronic Technology, P.R. China); Jing Zhang (Science and Technology on Communication Networks Laboratory, P.R. China)

3. **En-MAC: Environment-Aware MAC Protocol for WSNs in Intertidal Environment**
Xiaohan Lai (Zhejiang University, P.R. China); Miao Xu (University of South Carolina, USA); Xiaoyu Ji, Wenyuan Xu and Longdao Chen (Zhejiang University, P.R. China)

4. **Matrix Completion Based Sensor Selection Strategies in Wireless Sensor Networks**
Xiaohan Zhang and Changchuan Yin (Beijing University of Posts and Telecommunications, P.R. China)

5. **A Robot-Assisted Topology Control Algorithm in Software-Defined Sensor Networks**
Haohao Yin, Cui Ding, Feng Yan, Weiwei Xia and Lianfeng Shen (Southeast University, P.R. China); Shuguang Deng (Hunan City University, P.R. China)

6. **Quality of Information Maximization for Wire- less Sensor Networks With Heterogeneous Traffic**
Chunhui Feng (Xidian University, P.R. China); Peisheng Zhu (Chinese Academy of Sciences, P.R. China); Qinghai Yang (Xidian University, P.R. China)

CTS-02: Coding and Detection

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Perseverance
Chair: Wen Chen, Shanghai Jiaotong University, P.R. China

1. **Design of Precoding Matrix Scheme Based on Maximizing Frobenius Norm to Interference Alignment**
Junhui Zhao and Yunyi Liu (Beijing Jiaotong University, P.R. China); Yi Gong (South University of Science and Technology of China, Shenzhen, P.R. China)

2. **BMST Coded PPM over Free-space Optical Links with Iterative Receiver**
Jinshun Zhu (Sun Yat-sen University, P.R. China); Shancheng Zhao (Jinan University, P.R. China); Xiao Ma (Sun Yat-sen University, P.R. China)

3. **Graph-Merged Detection and Decoding of Polar-Coded MIMO Systems**
Shusen Jing, Junmei Yang, Anlan Yu, Xiaohu You, and Chuan Zhang (Southeast University, P.R. China)

4. **Signal Detection with Channel Estimation Error for Full Duplex Wireless System Utilizing Ambient Backscatter**
Chen Chen and Gongpu Wang (Beijing Jiaotong University, P.R. China); Feifei Gao (Tsinghua University, P.R. China); Yulong Zou (Nanjing University of Posts and Telecommunications, P.R. China)

5. **Secret Key Generation from Correlated Sources and Secure Link**
Daming Cao and Wei Kang (Southeast University, P.R. China)

6. **Compressing Big Graph Data: A Relative Node Importance Approach**
   Jiamei Yan and Zhaoyang Zhang (Zhejiang University, P.R. China)

SPS-02: Multimedia Signal Processing (II)

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Revolution
Chair: Xin Wang, Fudan University, P.R. China

1. **Robust Watermarking Based on Spread Transform**
   Yingying Li and Yifeng Zhang (Southeast University, P.R. China)

2. **The Face Detection Algorithm Based on Local Elastic Potential Energy Feature**
   Cheng Jiang and Yifeng Zhang (Southeast University, P.R. China)

3. **Imaging Experiment of Azimuth-variant Bistatic UWB SAR at UHF Band**
   Hongtu Xie (National University of Defense Technology, P.R. China); Shaoying Shi (Air Force Early Warning Academy, P.R. China); Daoxiang An (National University of Defense Technology, P.R. China); Fuhai Li (Hunan University, P.R. China); Guoqian Wang (Affiliated Hospital of Hunan Institute of Traditional Chinese Medicine, P.R. China)

4. **Distributed Compressive Video Sensing with Adaptive Measurements Based on Temporal Correlativity**
   Yang Yang, Zhang Dengyin and Fei Ding (Nanjing University of Posts and Telecommunications, P.R. China)

5. **QoE-Driven Centralized Scheduling for HTTP Adaptive Video Streaming Transmission over Wireless Networks**
   Tiantian Li and Haixia Zhang (Shandong University, P.R. China); Jie Tian (Shandong Normal University, P.R. China); Shuaishuai Guo (Shandong University, P.R. China)

6. **A New Nonlinear Tracking Differentiator and Its Application in Edge Detection**
   Song Xue, Xinsheng Jiang and Jimiao Duan (Logistical Engineering University, P.R. China)

WCS-03: Relaying

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Knowledge A
Chair: Boyang Liu, (Xi'an University of Posts and Telecommunications, P.R. China

1. **DF Relaying Networks in Randomly Distributed Interference Environments**
   Xiazhi Lai and Wanxin Zou (Shantou University, P.R. China); Dongqing Xie and Lisheng Fan (Guangzhou University, P.R. China)

2. **Performance Analysis for Full-Duplex Relaying D2D Communications in Cellular Networks**
   Yijin Pan, Ming Chen, Zhaohui Yang, and Hao Xu (Southeast University, P.R. China)

3. **Performance Analysis of Cooperative Relaying Communications for Space Information Networks**
   Houlian Gao, Jian Jiao, Shaohua Wu, Shushi Gu, and Qinyu Zhang (Harbin Institute of Technology, P.R. China)

4. **Performance Analysis for Cooperative Relaying in Diffusion-Based Molecular Communication**
   Bonan Yin, Xiaodong Ji, and Mugen Peng (Beijing University of posts & Telecommunications, P.R. China)

5. **Throughput Maximization for Block Fading Buffer-Aided Relay Channels with Non-Ideal Transmitter Circuit Power**
   Hengjing Liang, Chuan Huang, Zhi Chen, and Shaoqian Li (University of Electronic Science and Technology of China, P.R. China)

6. *Performance Test and Analysis of Multi-hop Network Based on UAV Ad Hoc Network Experiment*
   Xudong Wang, Zhichao Mi and Wang Hai (PLA Army Engineering University, P.R. China); Ning Zhao (The 28th Research Institute of China Electronics Technology Group Corporation, P.R. China)

WCS-04: Resource Allocation (I)

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Knowledge B
Chair: Wendong Yang, PLA Army Engineering University, P.R. China

1. **Resource Allocation Based on Clustering Algorithm for Hybrid Device-to-Device Networks**
   Hao Ren, Fan Jiang, and Honglin Wang (Xi'an University of Posts and Telecommunications, P.R. China)

2. **Position-based Mode Selection and Resource Allocation for D2D Communications Underlaying Cellular Networks**
   Xiaoyan Liu, Xiukui Li, and Changsheng Liu (Dalian University of Technology, P.R. China)

3. **Joint Resource Allocation for Multi-homing and Single-network Users in Heterogeneous Cognitive Radio Networks**
   Feng Chen and Mingjian Fu (Fuzhou University, P.R. China); Wen-Kang Jia (Chiao Tung University, Taiwan)

4. **Ant Colony Optimization Inspired Resource Allocation for Multiuser Multicarrier Systems**
   Chia-Hui Liao and Jen-Ming Wu (Tsing Hua University, Taiwan); Jianbo Du and Liqiang Zhao (Xidian University, P.R. China)

5. **Energy-Efficient User Access Control and Resource Allocation in HCNs with Non-ideal Circuitry**
   Yuhao Zhang, Qimei Cui and Ning Wang (Beijing University of Posts and Telecommunications, P.R. China)

6. **Distributed Matching Mechanism for Resource Sharing in Mobile Ad Hoc Cloud**
   Li Jin and Ling Tang (Nanjing University of Science and Technology, P.R. China)

WNS-02: Resource Allocation (II)

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Zijin
Chair: Yunlong Cai, Zhejiang University, P.R. China

1. **Energy-Efficient Resource Allocation in Delay-Aware Wireless Virtualized Networks**
   Tian Dang, Yitao Mo, Yaohua Sun, and Mugen Peng (Beijing University of posts & Telecommunications, P.R. China)

2. **Achieving Optimum Throughput for LTE and WiFi Coexistence**
   Xinghua Sun and Jun Zhang (Nanjing University of Posts and Telecommunications, P.R. China); Victor C.M. Leung (University of British Columbia, Canada); Hongbo Zhu (Nanjing University of Posts and Telecommunications, P.R. China)

3. **An Evolutionary Game for Joint Wireless and Cloud Resource Allocation in Mobile Edge Computing**
   Jing Zhang, Weiwei Xia, Zhixu Cheng, Qian Zou and Bonan Huang (Southeast University; Fei Shen (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, P.R. China); Feng Yan and Lianfeng Shen (Southeast University, P.R. China)

4. **Enabling Content Aware QoE Network Bandwidth Allocation**
   Lu Wang, Yongxiang Zhao, Chunxi Li, and Yuchun Guo (Beijing Jiaotong University, P.R. China)

5. **Share Communication and Energy Resources for Mobile Cloud Computing: An Optimal Cooperative Contract Approach**
   Xinsong Dong, Jianchao Zheng, Yueming Cai (PLA Army Engineering University, P.R. China); Jihao Yang (Leshan Normal University, P.R. China); Yida Wang (PLA Army Engineering University, P.R. China)

6. **Lifetime Maximization Based Resource Allocation for M2M Communication Networks**
   Zhangfeng Ma, Rong Chai and Qianbin Chen (Chongqing University of Posts and Telecommunications, P.R. China)

WNSS-02: Physical Layer Security (II)

Date: Oct. 11, 2017
Time: 16:00pm – 17:30pm
Room: Alliance
Chair: Jun Li, Nanjing University of Science and Technology, P.R. China

1. **Secrecy Sum Rate Maximization in NOMA Systems with Wireless Information and Power Transfer**
   Ganning He, Lixin Li and Xu Li (Northwestern Polytechnical University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Lie-Liang Yang (University of Southampton, UK); Zhu Han (University of Houston, USA)

2. **Secrecy Rate Maximization for MISO System with Energy Harvesting and Eavesdroppers**
   Sami Ahmed Haider, Yunlong Cai, and Minjian Zhao (Zhejiang University, P.R. China)

3. **Secure OFDM Transmission in Wireless Networks with Untrusted Relays**
   Qiuli Dong and Guobing Li (Xi'an Jiaotong University, P.R. China)

4. **Secure Precise Transmission with Multi-Relay- Aided Directional Modulation**
   Wei Zhu and Feng Shu (Nanjing University of Science and Technology, P.R. China); Tingting Liu (Nanjing Institute of Technology, P.R. China); Xiaobo Zhou, Jinsong Hu, Guangzu Liu, Linqing Gui, Jun Li, and Jinhui Lu (Nanjing University of Science & Technology, P.R. China)

5. **Robust Secure Beamforming for MISO SWIPT Broadcast Channels with Confidential Messages**
   Yuanlian Huo and Tingting Zhang (Northwest Normal University, P.R. China); Chunguo Li (Southeast University, P.R. China)

6. **Secrecy Analysis of UL Transmission for SWIPT in WSNs with Densely Clustered Eavesdroppers**
   Xin Hu, Kaizhi Huang, and Yajun Chen (National Digital Switching System Engineering and Technological Research Center, P.R. China); Xiaoming Xu and Xiaohu Liang (PLA Army Engineering University, P.R. China)

October 12, 2017 Thursday

AHSNS-03: Localization

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Unique
Chair: Cheng Li, Memorial University, Canada

1. **A New Passive Localization Method of the Interference Source for Satellite Communications (Invited Paper)**
   Benjian Hao, Di An, Linlin Wang, Zan Li and Yue Zhao (Xidian University, P.R. China)

2. **Holographic Radio Interferometry for Target Tracking in Dense Multipath Indoor Environments**
   Bing Xu, Wangdong Qi, Yuexin Zhao and Li Wei (PLA Army Engineering University, P.R. China); Cheng Zhang (PLA Airborne Training Base, P.R. China)

3. **Geographic Information System based Estimation and Correction Algorithm for Outdoor Location**
   Yi Zhang, Lin Ma, Shuai Han and Weixiao Meng (Harbin Institute of Technology, P.R. China)

4. **Gaussian Process Based Radio Map Construction for LTE Localization**
   Wencan Zhang, Haochen Huang and Xiaohua Tian (Shanghai Jiao Tong University, P.R. China)

5. **Enhancing Direction-Finding Accuracy for Shortwave Fixed Stations**
Ying Ju (Xi'an Jiaotong University & State Radio Monitoring Center, P.R. China); Yuan Chen (Shaanxi Monitoring Station, State Radio Monitoring Center, P.R. China); Xiayi Qiu and Qinye Yin (Xi'an Jiaotong University, P.R. China)

6. **Robust Indoor Localization in Ultra Dense Networks: A Fingerprint Similarity Approach**
Danni Hou, Junyu Liu, Min Sheng, Yan Zhang, Linlin Peng, Yang Zheng and Jiandong Li (Xidian University, P.R. China)

CTS-03: Transmission and Multiple Access

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Perseverance
Chair: Li Chen, Sun Yat-sen University, P.R. China

1. **An Opportunistic-Bit Scheme with IP Styled Communication**
Bingli Jiao (Peking University, P.R. China)

2. **Multi-tap Analog MIMO Self-Interference Cancellation for Full-Duplex Communications**
Yaxin Liu, Donglin Liu, Xudong Li and Chuan Huang (University of Electronic Science and Technology of China, P.R. China)

3. **FFRD: Fragment Forwarding and Reassembly Decoupling Based Chunk Transmission in NDN**
Chengbao Cao and Kaiping Xue (University of Science and Technology of China, P.R. China); Hao Yue (San Francisco State University, USA); Junjie Xu (University of Science and Technology of China, P.R. China)

4. **Buffer-Aided Secure Two-Hop Communications with Adaptive Link Selection and on/off Power Control**
Jing Wan, Deli Qiao, and Haifeng Qian (East China Normal University, P.R. China)

5. **A Rate-Splitting Non-Orthogonal Multiple Access Scheme for Uplink Transmission**
Ye Zhu, Xianbin Wang, Zhaoyang Zhang and Xiaoming Chen (Zhejiang University, P.R. China); Yan Chen (Huawei Technologies, P.R. China)

6. **Feedback-aided Irregular Repetition Slotted ALOHA (F-IRSA)**
Dai Jia, Hanxiao Yu, Ce Sun, Zesong Fei, and Jingming Kuang (Beijing Institute of Technology, P.R. China)

SPS-03: Signal Processing for Localization

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Revolution
Chair: Qinghe Du, Xi'an Jiaotong University, P.R. China

1. **SAILoc: A Novel Acoustic Single Array System for Indoor Localization**
Guinan Li, Lei Zhanglei, Feng Lin, Minlin Chen, and Zhi Wang (Zhejiang University, P.R. China)

2. **Automatic Parking Slot Detection Based on Around View Monitor (AVM) Systems**
Lei Li and Changle Li (Xidian University, P.R. China); Qieshi Zhang (Waseda University, Japan); Tao Guo and Zhifang Miao (Xidian University, P.R. China)

3. **Localization for Visible Light Communication with Practical Non-Gaussian Noise Model**
Yueyue Zhang, Yaping Zhu, Weiwei Xia, Feng Yan, and Lianfeng Shen (Southeast University, P.R. China); Yi Wu (Fujian normal university, P.R. China)

4. **TOA Estimation in Dense Multipath Environment for Mobile Device Using Audible LFM Signal**
Yifan Gu (Zhejiang University, P.R. China); Shumin Chen (Zhejiang Sci-Tech University, P.R. China); Yanbo Xiang, Yiqian Xia, and Yuanxin Xu (Zhejiang University, P.R. China)

5. **Direct Position Determination Based on Unitary Space-time Subspace Data Fusion**
Jie-xin Yin, Rui-rui Liu, Ding Wang, and Ying Wu (Zhengzhou Institute of Information Science and Technology Institute, P.R. China)

6. **Maximum Likelihood Network Localization Using Range Estimation and GPS Measurements**
Hongwei Yu and Yi Jiang (Fudan University, P.R. China)

WCS-05: Resource Allocation (II)

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Knowledge A
Chair: Wei Wang, Zhejiang University, P.R. China

1. **Adaptive Multi-Band Resource Allocation for a Two-User Simultaneous Information and Power Transmission System**
Xiaoyang Li, Zidong Han and Yi Gong (Southern University of Science and Technology, P.R. China)

2. **Underlay Spectrum Sharing with Wireless Power Transfer Towards Primary User**
Chao Zhai (Shandong University, P.R. China); Long Shi (Singapore University of Technology & Design, Singapore); He Chen (University of Sydney, Australia)

3. **Economical-Energy-Efficient Resource Allocation for Cache-Enabled Cloud Radio Access Networks**
Zhipeng Yan and Mugen Peng (Beijing University of posts and Telecommunications, P.R. China)

4. **Resource Allocation Algorithm Based on Energy Cooperation in Two-way Cognitive Radio Relay Networks**
Zhenwei Xie, Qi Zhu and Su Zhao (Nanjing University of Posts and Telecommunications, P.R. China)

5. **Joint Resource Allocation for Outdoor and Indoor UEs in Heterogeneous Data and Energy Integrated Communication Networks**
Yizhe Zhao (University of Electronic Science and Technology of China, P.R. China); Ning Wei (ZTE Corporation, P.R. China); Jie Hu (University of Electronic Science and Technology of China, P.R. China); Kun Yang (University of Essex, UK); Qin Yu and Chuan Huang (University of Electronic Science and Technology of China, P.R. China)

6. **Robust uplink power allocation for two-tier heterogeneous networks**
Yongjun Xu, Yuchao Liu, and Rong Lai (Chongqing University of Posts and Telecommunications, P.R. China)

WCS-06: Power Control

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Knowledge B
Chair: Guan Gui, Nanjing University of Posts and Telecommunications, P.R. China

1. **QoS-Driven Power Control for Energy Harvesting Fading Multiple-Access Channels**
   Jingwen Han and Deli Qiao (East China Normal University, P.R. China)

2. **Throughput Maximization for a UAV-Enabled Wireless Power Transfer in Relaying System**
   Meng Hua, Chunguo Li, Yongming Huang and Luxi Yang (Southeast University, P.R. China)

3. **Throughput Maximization in Backscatter Assisted Wireless Powered Communication Networks with Battery Constraint**
   Bin Lyu, Zhen Yang and Guan Gui (Nanjing University of Posts and Telecommunications, P.R. China)

4. **System Power Minimization for Virtualized Cloud Radio Access Networks with Delay Constraint**
   Shirui Wang, Ying Wang, Ruijin Sun and Yuanfei Liu (Beijing University of Posts and Telecommunications, P.R. China)

5. **Position-based Wireless Communications: Power Control and Mode Handover**
   Xiukui Li (Dalian University of Technology, P.R. China)

6. **Joint Power Control and User Pairing for Ergodic Capacity Maximization in V2V Communications**
   Yinlu Wang, Zhaohui Yang, Yijin Pan and Ming Chen (Southeast University, P.R. China)

WNS-03: Radio Access Networks

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Zijin
Chair: Zhifeng Zhao, Zhejiang University, P.R. China

1. **Energy Efficient Content-Centric Beamforming in Multicast Fog Radio Access Network**
   Xihan Chen, Minjian Zhao and Yunlong Cai (Zhejiang University, P.R. China)

2. **Minimum-Latency Communication in Wireless Mesh Networks Under Noisy Physical Interference Model**
   Qin Xin (University of the Faroe Islands, Faroe Islands); Xia Yan (University of Hunan, P.R. China)

3. **Random Access Protocol Design and Optimization for Standalone LTE-U Systems**
   Chaohui Zhao, Jiantao Yuan, Aiping Huang, and Hangguan Shan (Zhejiang University, P.R. China)

4. **Cell Planning for Millimeter Wave Cellular Networks**
   Qiyao Wu, Li Chen, Xiaohui Chen, and Weidong Wang (University of Science and Technology of China, P.R. China)

5. **A Novel Online Incentive Mechanism under Budget Constraint for Crowdsourcing Systems**
   Jiawei Zhang, Xiong Wang, Xiaoying Gan and Xiaohua Tian (Shanghai Jiao Tong University, P.R. China)

6. **Big Data Enabled User Behavior Characteristics in Mobile Internet**
   Shuai Jiang, Baoshan Wei, Tong Wang, Zhenbang Zhao and Xing Zhang (Beijing University of Posts and Telecommunications, P.R. China)

WNSS-03: Jamming and Secure Transmission

Date: Oct. 12, 2017
Time: 14:00pm – 15:30pm
Room: Alliance
Chair: Caijun Zhong, Zhejiang University, P.R. China

1. **Secure UAV Communication in the Presence of Full-Duplex Active Eavesdropper (Invited Paper)**
   Chenxi Liu and Tony Q. S. Quek (Singapore University of Technology and Design, Singapore); Jemin Lee (Daegu Gyeongbuk Institute of Science and Technology, Korea)

2. **Efficient and Unrecognizable OFDM Jamming By Failing the Cyclic Prefix Functionality**
   Li Li, Shulin Tian, Jianguo Huang and Peng Zhang (University of Electronic Science and Technology of China, P.R. China)

3. **Achieving Secure Transmission using Feedback-based LT Code with Degree Distribution Updated**
   Likang Wang, Jianhua Peng, Yi Ming, and Kaizhi Huang (Zhengzhou Institute of Information Science and Technology, P.R. China); Aiqin Li (PLA 61062 troops, P.R. China)

4. **Beamformer Design and Performance Analysis of Multi-antenna Wireless Legitimate Surveillance Systems**
   Xin Jiang (Zhejiang University, P.R. China); Sheng Yang (CentraleSupélec, France); Caijun Zhong, Fengzhong Qu, Xiaoming Chen, and Zhaoyang Zhang (Zhejiang University, P.R. China)

5. **Secure Transmission of Cognitive Untrusted Relay Networks with Selection Diversity**
   Dechuan Chen, Yunpeng Cheng, Weiwei Yang and Jianwei Hu, Yueming Cai (PLA Army Engineering University, P.R. China); Yingbo Hu (PLA 75841 Troops, P.R. China)

6. **UAV Wireless Information Surveillance via Proactive Eavesdropping**
   Qingheng Song and Shi Jin (Southeast University, P.R. China); Fu-Chun Zheng (University of York, UK); Shengli Zhang (Shenzhen University, P.R. China)

AHSNS-04: Sensing and Estimation

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Unique
Chair: Hai Wang, PLA Army Engineering University, P.R. China

1. **An Energy-Saving Spectrum Sensing Scheme with Combined Clustering and Censoring in Cognitive Wireless Sensor Networks**
   Yitao Liu and Changping Zhu (Hohai University, P.R. China); Peishun Yan (NanJing University of Posts and Telecommunications, P.R. China)

2. **A Compressive and Adaptive Sampling Approach in Crowdsensing Networks**
   Jingjing Chen, Zhonghui Chen, Haifeng Zheng and Xinxin Feng (Fuzhou University, P.R. China)

3. **Collaborative Data Collection with Hybrid Vehicular Crowd Sensing in Smart Cities**
   Maoqiang Wu, Dongdong Ye, Jiawen Kang and Rong Yu (Guangdong University of Technology, P.R. China)

4. **PowerSensor: A Method for Power Optimization of Smartphone Through Sensing Wakelock Application**
   Bo Chen, Xi Li and Xuehai Zhou (University of Science and Technology of China, P.R. China)

5. **An Unscented Kalman Filter Based Available Bandwidth Estimation Algorithm for Space Bundle Links**
   Xiaoli Liao (Harbin Institute of Technology, Shen Zhen, P.R. China); Zhihua Yang (Harbin Institute of Technology, P.R. China); Peng Yuan (Harbin Institute of Technology, Shenzhen, P.R. China)

6. **Traffic Estimation in Road Networks via Compressive Sensing**
   Jiayin Li, Haifeng Zheng, Xinxin Feng and Zhonghui Chen (Fuzhou University, P.R. China)

CTS-04: Performance Analysis

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Perseverance
Chair: Shuai Han, Harbin Institute of Technology, P.R. China

1. **Can Channel Output Feedback Enhance the Secrecy Capacity of the Finite State Markov Wiretap Channel with Delayed State Feedback?**
   Bin Dai and Zheng Ma (Southwest Jiaotong University, P.R. China)

2. **On the Capacity of an Orbital Angular Momentum Based MIMO Communication System**
   Yuqing Yuan, Zhaoyang Zhang, Ji Cang, Huayang Wu and Caijun Zhong (Zhejiang University, P.R. China)

3. **Impact of Adaptive Carrier-Sensing Range on the Performance of Dense Wireless Networks**
   Zhaoming Ding (Southeast University, P.R. China); Song Xing (California State University, Los Angeles, USA); Feng Yan, Zhengquan Li, and Lianfeng Shen (Southeast University, P.R. China)

4. **Performance Analysis for Decoding LT Codes over BIAWGN Channels with SNR Mismatch**
   Lei Yuan and Jie Pan (Lanzhou University, P.R. China); Lin Yuan (Tianjin Optical Electrical Group Co. Ltd., P.R. China)

5. **Achievable Degrees of Freedom (DoF) Analysis in Multi-user Half-duplex Relay Interference Networks**
   Xiaoying Zhang, Chao Wang, Ping Wang and Fuqiang Liu (Tongji University, P.R. China)

6. **Tradeoff Between Efficiency and Delay of Distributed Source Coding for Uplink Transmissions in Machine Type Communications**
   Wen Wang, Jinkang Zhu, Sihai Zhang, and Wuyang Zhou (University of Science and Technology of China, P.R. China)

SPS-04: Array Signal Processing

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Revolution
Chair: Xiaofei Zhang, Nanjing University of Aeronautics and Astronautics, P.R. China

1. **Sum and Difference Coarrays Based 2-D DOA Estimation with Co-Prime Parallel Arrays**
   Junpeng Shi and Guoping Hu (Air Force Engineering University, P.R. China); Xiaofei Zhang and Pan Gong (Nanjing University of Aeronautics and Astronautics, P.R. China)

2. **Calibration for Spaceborne Phased Array Antennas Without Interrupting Satellite Communications**
   Yujie Lin (Beijing Institute of Technology, P.R. China); Qiang Ma (China Academy of Space Technology, P.R. China); Shuai Wang, Xiangyuan Bu and Jianping An (Beijing Institute of Technology, P.R. China)

3. **Two Dimensional Angle Estimation Using Separate Nested Acoustic Vector Sensor Array**
   Jianfeng Li and Feng Wang (Hohai University, P.R. China); Xiaofei Zhang (Nanjing University of Aeronautics and Astronautics, P.R. China)

4. **Direction-of-Arrival Estimation for Coherently Distributed Sources via Symmetric Uniform Linear Array**
   Yan-Mei Ma, Ke Deng, and Zhi-Hao Ding (Xi'an Jiaotong University, P.R. China)

5. **Three-Parallel Co-prime Array Configuration for Two-dimensional DOA Estimation**
   Pan Gong and Xiaofei Zhang (Nanjing University of Aeronautics and Astronautics, P.R. China); Junpeng Shi (Air Force Engineering University, P.R. China); Wang Zheng (Nanjing University of Aeronautics and Astronautics, P.R. China)

6. **A Novel 2D DOA Estimation via Tensor Modeling for Cylindrical Conformal Array**
   Xiaoyu Lan and Yufeng Li (Shenyang Aerospace University, P.R. China)

WCS-07: OFDM and Multi-Carrier

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Knowledge A
Chair: Gang Wu, University of Electronic Science and Technology of China, P.R. China

1. **Information Rates of Unipolar OFDM Schemes in Gaussian Optical Intensity Channel**
   Jing Zhou and Wenyi Zhang (University of Science and Technology of China, P.R. China)

2. **MMSE Precoding With Configurable Sizes for GFDM Systems**
   Hong Wang and Rongfang Song (Nanjing University of Posts and Telecommunications, P.R. China)

3. **A Time-domain Calibration Scheme of Channel Reciprocity for TDD MIMO-OFDM System with IQ Imbalance**
   Yan Liang, Rongfang Song, Fei Li and Xueyun He (Nanjing University of Posts & Telecommunications, P.R. China); Hongbin Li (Stevens Institute of Technology, USA)

4. **On the Practical Benefit of Hexagonal Multicarrier Faster-than-Nyquist Signaling**
   Siming Peng, AiJun Liu, Xinhai Tong, Xiaohu Liang and Ke Wang (PLA Army Engineering University, P.R. China)

5. **Combination-Selection Algorithm for FBMC-IM System**
   Jian Zhang, Minjian Zhao, Jie Zhong and Tianhang Yu (Zhejiang University, P.R. China)

WCS-08: Detection and Estimation

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Knowledge B
Chair: Caijun Zhong, Zhejiang University, P.R. China

1. **Robust Beam Management Scheme Based on Simple 2-D DOA Estimation**
   Xiao Chen, Zaichen Zhang, Liang Wu, Jian Dang (Southeast University, P.R. China); Pen-Shun Lu (Sony China Research Lab, Taiwan); Chen Sun (SONY, P.R. China)

2. **Asynchronous Detection for Machine-to-Machine Systems with Code Division Multiple Access**
   Zhaohui Yang, Ming Chen, Yijin Pan, Hao Xu, and Jianfeng Shi (Southeast University, P.R. China)

3. **Relaxed-Bound K-Best Sphere Detection for Differential Unitary Space-Time Modulation**
   Yipeng Du (Beijing University of Science and Technology, P.R. China); Shuangshuang Han (Institute of Automation, Chinese Academy of Sciences, P.R. China); Jian Liu (University of Electronic Science and Technology of China, P.R. China); Yinghua Zhang (Beijing University of Science and Technology, P.R. China)

4. **Joint Energy and Spectrum Detection in Cooperative Cognitive Radio under Noise Uncertainty**
   Yazhou Hu, Jing Hu, Tiecheng Song, Yueyue Zhang, and Zhixu Cheng (Southeast University, P.R. China)

5. **A Novel Robust Spatial Spectrum Sensing Algorithm**
   Ming Wu, Tiecheng Song, Lianfeng Shen, Zhengquan Li, Ziyan Jia, and Rui Zhang (Southeast University, P.R. China)

6. **Low Complexity K-best Detectors for MIMO-OFDM-IM Systems**
   Jian Zhang, Minjian Zhao, Jie Zhong, and Tianhang Yu (Zhejiang University, P.R. China)

WNS-04: Data Caching (I)

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Zijin
Chair: Junhui Zhao, Beijing Jiaotong University, P.R. China

1. **Joint Pushing and Caching Communication with 2-Dimensional Queue Model: Delay-cost Tradeoff (Invited Paper)**
   Meng Wang and Wei Chen (Tsinghua University, P.R. China); Anthony Ephremides (University of Maryland, USA)

2. **Joint Caching and Sleep-Active Scheduling for Energy-Harvesting Based Small Cells**
   Dan Xu, Hao Jin, Chenglin Zhao, and Dong Liang (Beijing University of Posts and Telecommuni cations, P.R. China)

3. **A Contextual Multi-Armed Bandit Approach to Caching in Wireless Small Cell Network**
   Chenxi Zhang, Pinyi Ren, and Qinghe Du (Xi'an Jiaotong University, P.R. China)

4. **Mobility-Embedded and Social-Aware Distributed Caching for D2D Content Sharing**
   Wei Zhang, Dan Wu, Xiaoming Chen; Junyue Qu, and Yueming Cai (PLA Army Engineering University, P.R. China)

5. **Machine Learning based Small Cell Cache Strategy for Ultra Dense Networks**
   Shen Gao, Pei Li, Zhiwen Pan, Nan Liu, and Xiaohu You (Southeast University, P.R. China)

WNSS-04: Privacy and Content Protection

Date: Oct. 12, 2017
Time: 16:00pm – 17:30pm
Room: Alliance
Chair: Zhou Su, Shanghai University, P.R. China

1. **Data Leakage Between C/S Communication: A Case Study on Android Music App**
   Huanhuan Li, Qian Luo, Shubin Zhang, Haibin Zhang, and Jiajia Liu (Xidian University, P.R. China)

2. **Scalable Protection Scheme for the H.264/SVC Video Streaming**
   Ting Ma (Southwest Petroleum University, P.R. China)

3. **Secure and Privacy-preserving Task Announcement in Vehicular Cloud**
   Abdulrahman Alamer and Yong Deng (University of Ontario Institute of Technology, Canada); Xiaodong Lin (Wilfrid Laurier University, Canada)

4. **Location Privacy-Aware Task Recommendation for Spatial Crowdsourcing**
   Abdulrahman Alamer (University of Ontario Institute of Technology, Canada); Jianbing Ni (University of Waterloo, Canada); Xiaodong Lin (Wilfrid Laurier University, Canada); Sherman Shen (University of Waterloo, Canada)

5. **WebLogger: Stealing Your Personal PINs Via Mobile Web Application**
   Rui Song, Yubo Song, Qihong Dong and Aiqun Hu (Southeast University, P.R. China); Shang Gao (The Hong Kong Polytechnic University, Hong Kong)

6. **Multi-authority Attribute-based Access Control Scheme in mHealth Cloud with Unbounded Attribute Universe and Decryption Outsourcing**
   Qi Li and Hongbo Zhu (Nanjing University of Posts and Telecommunications, P.R. China)

13 October, 2017 Friday

AHSNS-05: Wireless Network Analysis

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: Unique
Chair: Shuai Han, Harbin Institute of Technology, P.R. China

1. **Characteristics Analysis of DOPs for Dual-GNSS Constellations with Uncertain Clock Offset**
   Man Yao, Gangming Lv, Qiuli Dong, and Tantan Zhao (Xi'an Jiaotong University, P.R. China)

2. **The Fundamental Analysis of the Road Efficiency for Internet of Vehicles**
   Kai Xiong, Supeng Leng (University of Electronic Science and Technology of China, P.R. China); Caixing Shao (Southwest University for Nationalities, P.R. China); Quanxin Zhao and Guanhua Qiao (University of Electronic Science and Technology Of China, P.R. China)

3. **Mobility Patterns Analysis of Beijing Residents based on Call Detail Records**
   Lixing Shi and Wen Wang, Wei Cai (University of Science and Technology of China, P.R. China); Zhen Wang (China Telecom Corporation Limited, P.R. China); Sihai Zhang, and Wuyang Zhou (University of Science and Technology of China, P.R. China)

4. **Multi-hop Links Quality Analysis of 5G Enabled Vehicular Networks**
   Shikuan Li, Zipeng Li, Xiaohu Ge and Jing Zhang (Huazhong University of Science and Technology, P.R. China); Minho Jo (Korea University, Korea)

5. **Impact of Mobility on Energy Consumption in Mobile Ad hoc Networks**
   Yongshan Ma and Qinghai Yang (Xidian University, P.R. China); Kyung Sup Kwak (Inha University, Korea)

6. **Throughput Maximization for Energy Harvesting Cognitive Radio Networks with Finite Horizon**
   Fan Zhang, Tao Jing, Yan Huo, and Kaiwei Jiang (Beijing Jiaotong University, P.R. China)

SPS-05: Beamforming for MIMO Systems

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: Perseverance
Chair: Nan Zhao, Dalian University of Technology, P.R. China

1. **Coordinated Beamforming Scheme for Heterogeneous Networks with Band-limited Backhaul Constraint**
   Fasheng Zhou, Gaoyong Luo and Lisheng Fan (Guangzhou University, P.R. China); Jie Tang (South China University of Technology, P.R. China)

2. **Robust Beamforming Designs for Downlink Cloud Radio Access Networks**
   Dongliang Yan, Rui Wang, and Erwu Liu (Tongji University, P.R. China)

3. **Hybrid Precoding for Millimeter Wave Massive MIMO with Analogy Combing**
   Shaoqing Zhou, Wei Xu, Hua Zhang, and Xiaohu You (Southeast University, P.R. China)

4. **Sub-array Based Hybrid Precoding Design for Downlink Millimeter-Wave Multi-User Massive MIMO Systems**
   Yuehong Guo, Lixin Li, and Xiaocong Wen (Northwestern Polytechnical University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Zhu Han (University of Houston, USA)

5. **Nonsmooth Optimization for Joint Multicast Beamforming and User Scheduling in Massive MIMO Systems**
   Longfei Zhou, Wei Jiang, and Wu Luo (Peking University, P.R. China)

6. **Robust Beamforming Against Direction-of-Arrival Mismatch via Signal-to-Interference-plus-Noise Ratio Maximization**
   Wan Huan, Huiping Huang, Bin Liao, and Zhi Quan (Shenzhen University, P.R. China)

SPS-06: Signal Processing for MIMO and Radar Systems

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: Revolution
Chair: Xianfu Lei, Southwest Jiaotong University, P.R. China

1. **An Improved Algorithm for Doppler Ambiguity Resolution Using Multiple Pulse Repetition Frequencies**
   Yang Li, ChunMei Xu, Xin Yan, and Qi Liu (Southeast University, P.R. China)

2. **Range and Velocity Estimation for OFDM-Based Radar-Radio Systems**
   Xuanxuan Tian, Tingting Zhang, and Qinyu Zhang and Hongguang Xu (Harbin Institute of Technology, Shenzhen, P.R. China); Zhaohui Song (East China Normal University, P.R. China)

3. **Adaptive Filtering Based 3D Massive MIMO Sparse Channel Estimation**
   Chan Wang, Guan Gui, and Fei Li (Nanjing University of Posts and Telecommunications, P.R. China)

4. **A Symmetric Accumulated Cross-Correlation Method of Parameter Estimation Based on Fractional Fourier Transform for ISAR Motion Compensation**
   Jiayin Xue, Xiao Han, and Qinyu Zhang (Harbin Institute of Technology, Shenzhen, P.R. China)

5. **Spectral and Energy Efficiency of Cell-Free Massive MIMO Systems with Hardware Impairments**
   Jiayi Zhang and Yinghua Wei (Beijing Jiaotong University, P.R. China); Emil Björnson (Linköping University, Sweden); Yu Han (Southeast University, P.R. China); Xu Li (Beijing Jiaotong University, P.R. China)

6. **Secure Energy Efficiency Optimization for MISO Cognitive Radio Network with Energy Harvesting**
   Miao Zhang, Kanapathippillai Cumanan, and Alister G. Burr (University of York, UK)

WCS-09: NOMA (I)

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: Knowledge A
Chair: Rose Qingyang Hu, Utah State University, USA

1. **Dynamic Power Splitting between Information and Power Transfer in Non-orthogonal Multiple Access (Invited Paper)**
   Rose Qingyang Hu and Zekun Zhang (Utah State University, USA)

2. **Uplink Simultaneous Wireless Information and Power Transfer with Non-Orthogonal Multiple Access**
   Xiangmei Cheng and Yuan Liu (South China University of Technology, P.R. China)

3. **Power Control, User Scheduling and Resource Allocation for Downlink NOMA Systems with Imperfect Channel State Information**
   Zihan Zhang, Qinghong Xia, Guanding Yu, and Rui Liu (Zhejiang University, P.R. China)

4. **Energy-Efficient Power Allocation for Non-orthogonal Multiple Access with Imperfect Successive Interference Cancellation**
   Hong Wang, Zhaoyang Zhang, and Xiaoming Chen (Zhejiang University, P.R. China)

5. **Power Allocation Optimization for Uplink Non-Orthogonal Multiple Access Systems**
   Huiling Zuo and Xiaofeng Tao (Beijing University of Posts and Telecommunications, P.R. China)

WCS-10: Massive MIMO (I)

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: Knowledge B
Chair: Xiumei Yang, Shanghai Research Center for Wireless Communications, P.R. China

1. **DASTPC: Performance of Dual-polarized Antenna Based Space-Time-Polarization Precoding over Rician-K Channel with Imperfect CSI (Invited Paper)**
   Chenggui Lou, Qinyu Zhang, Bin Cao, and Tingting Zhang (Harbin Institute of Technology, Shenzhen, P.R. China)

2. **On the Design of Massive Access**
   Xiaoming Chen, Zhaoyang Zhang, Caijun Zhong, and Rundong Jia (Zhejiang University, P.R. China)

3. **A Layered Iterative Sampling Algorithm for Near-Optimal Detection in Uplink Massive MIMO Systems**
   Nutian Zhang, Chao Fei, Zhenbing Zhang, Jianhao Hu, and Jienan Chen (University of Electronic and Technology of China, P.R. China)

4. **Measurements of Massive MIMO Channel in Real Environment with 8-Antenna Handset**
   Jun She, Chen Gao, Yu Yu, Peng-fei Cui, and Wenjun Lu (Nanjing University of Posts and Telecommunications, P.R. China); Shi Jin (Southeast University, P.R. China); Hong-Bo Zhu (Nanjing University of Posts and Telecommunications, P.R. China)

5. **A Novel Beamforming to Improve Secrecy Rate in a DAJ Based Untrusted Relay Network**
   Tamer Mekkawy, Rugui Yao, Fei Xu, Yanan Lu, and Ling Wang (Northwestern Polytechnical University, P.R. China)

WNS-05: Data Caching (II)

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: Zijin
Chair: Philippe Martins, TELECOM ParisTech, France

1. **Incentive Cooperative Caching for Localized Information-Centric Networks**
   Junjie Xu, Kaiping Xue, and Chengbao Cao (University of Science and Technology of China, P.R. China); Hao Yue (San Francisco State University, USA)

2. **Adverse Selection Based Incentive Mechanism for Cooperative Caching in Distributed Storage Systems**
   Ruqiu Ma, Li Wang, and Yinan Ding (Beijing University of Posts and Telecommunications, P.R. China); Zhu Han (University of Houston, USA); Bingli Jiao (Peking University, P.R. China)

3. **Clustered Small Base Stations for Cache-Enabled Wireless Networks**
   Yan Niu, Shen Gao, Nan Liu, Zhiwen Pan, and Xiaohu You (Southeast University, P.R. China)

4. **Joint Computation Offloading and Data Caching with Delay Optimization in Mobile-Edge Computing System**
   Haixia Wang, Rongpeng Li, Lu Fan, and Honggang Zhang (Zhejiang University; P.R. China)

5. **A Learning-Based Approach for Proactive Caching in Wireless Communication Networks**
   Yuyang Wang, Yun Chen, Haibo Dai, Yongming Huang, and Luxi Yang (Southeast University, P.R. China)

WNSS-05: Wireless Network Security

Date: Oct. 13, 2017
Time: 8:30am – 10:00am
Room: U Lake
Chair: Huifang Chen, Zhejiang University, P.R. China

1. **Steady-State Performance Analysis of Consensus-based Distributed Detection under Sensing Data Falsification Attack**
   Xiaoyan Zheng, Lei Xie and Huifang Chen (Zhejiang University, P.R. China)

2. **A Novel Method against the Firewall Bypass Threat in OpenFlow Networks**
   Yicong Zhang and Jie Li (University of Tsukuba, Japan); Lin Chen (The University of Paris-Sud, France); Yusheng Ji (National Institute of Informatics, Japan); Feilong Tang (Shanghai Jiao Tong University, P.R. China)

3. **An Intelligent Honeynet Architecture Based on Software Defined Security**
   Xiangjun Meng, Zhifeng Zhao, Rongpeng Li, and Honggang Zhang (Zhejiang University, P.R. China)

4. **Three Lower Bounds on Secrecy Capacity for Indoor Visible Light Communications**
   Cheng Liu (Southeast University, P.R. China); Jin-Yuan Wang (Nanjing University of Posts and Telecommunications, P.R. China); Jun-Bo Wang, Jian-Xia Zhu and Ming Chen (Southeast University, P.R. China)

5. **Self-Organizing Map-Based Scheme Against Probabilistic SSDF Attack in Cognitive Radio Networks**
   Zhixu Cheng, Tiecheng Song, Jing Zhang, Jing Hu, Yazhou Hu, Lianfeng Shen, Xi Li and Jun Wu (Southeast University, P.R. China)

6. **Secure Content Sharing Protocol for D2D Users Based on Profile Matching in Social Networks**
   Lei Wang, Zhonglei Li and Mingkai Chen (Nanjing University of Posts and Telecommunications, P.R. China); Aiqing Zhang (Anhui Normal University, P.R. China); JingWu Cui and Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China)

WCS-11: NOMA (II)

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: Unique
Chair: Lin Bai, Beihang University, P.R. China

1. **Researches on Non-Orthogonal Multiple Access in Multiple-Antenna 5G Relaying Networks**
   Xiaopeng Yan, Jianhua Ge, and Yangyang Zhang (Xidian University, P.R. China)

2. **Parallel-Implemented Message Passing Algorithm for SCMA Decoder based on GPGPU**
   Yunfeng Qi, Gang Wu and Su Hu (University of Electronic Science and Technology of China, P.R. China); Gao Yuan (Tsinghua University, P.R. China)

3. **ACK Feedback based UE-to-CTU Mapping Rule for SCMA Uplink Grant-Free Transmission**
   Jiali Shen, Wen Chen, Fan Wei, and Yongpeng Wu (Shanghai Jiao Tong University, P.R. China)

4. **A NOMA-PSO Based Cooperative Transmission Method in Satellite Communication Systems**
   Ruimin Wan, Lina Zhu, Tian Li, and Lin Bai (Beihang University, P.R. China)

5. **Joint Detection and Decoding of Polar-Coded SCMA Systems**
   Shusen Jing, Chao Yang, Junmei Yang, Xiaohu You, and Chuan Zhang (Southeast University, P.R. China)

SPS-07: Resource Allocation for Communication Systems

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: Perseverance
Chair: Lei Wang, Nanjing University of Posts and Telecommunications, P.R. China

1. **Efficient and Fair Pilot Allocation for Multi-cell Massive MIMO Systems**
   Jianhua Liu (Shandong University, P.R. China); Yueheng Li (University of Bremen, Germany); Haixia Zhang and Shuaishuai Guo (Shandong University, P.R. China)

2. **Sidelobe Interference Reduced Scheduling Algorithm in Millimeter Wave Networks**
   Lei Wang, Siran Liu, Mingkai Chen, Jingwu Cui and Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China)

3. **Power Allocation for Multicell Mixed-ADC Massive MIMO Systems in Rician Fading Channels**

Mengjiao Zhang (Southeast University, P.R. China); Weiqiang Tan (Guangzhou University, P.R. China); Junhui Gao, Xi Yang and Shi Jin (Southeast University, P.R. China)

4. **Relay Power Allocation for Security Enhancement in Three-Phase AF Two-Way Relaying Systems**
   Zonghao Ma, Ning Wang, Yanhui Lu and Dalong Zhang (Zhengzhou University, P.R. China)

5. **Modulation Order Selection and Power Allocation for Energy Efficient VLC-OFDM Systems**
   Pengfei Ge, Xiao Liang, Jiaheng Wang and Chunming Zhao (Southeast University, P.R. China)

6. **Maximum Uplink SNR User Association in MISO HetNets with Decoupled Access**
   Ran Li, Kai Luo and Tao Jiang (Huazhong University of Science and Technology, P.R. China)

SPS-08: Interference Suppression and Multiplexing

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: Revolution
Chair: Weixiao Meng, Harbin Institute of Technology, P.R. China

1. **A Novel Windowing Scheme to Suppress Spectral Sidelobes for OFDMA Systems**
   Lei Wang (PLA University of Science and Technology, P.R. China)

2. **A Residual Interference Mitigation Technique for Frequency-Domain Interference Suppression in DSSS Communication Systems**
   Zonghan Wei and Ran Tao (Beijing Institute of Technology, P.R. China)

3. **Self-Correction Phase Noise Compensation Based on Decision Feedback in SC-FDE Satellite Systems**
   Xu Chen, Cheng Wang, Gaofeng Cui, Weidong Wang, and Xiuhua Li (Beijing University of Posts and Telecommunications, P.R. China)

4. **Compressed Sensing for Clipping Noise Cancellation in DCO-OFDM Systems Based on Observation Interference Mitigation**
   Pu Miao (Qingdao University, P.R. China); Chenhao Qi and Lenan Wu (Southeast University, P.R. China); Bingcheng Zhu (Nanjing University of Posts and Telecommunications, P.R. China); Kangjian Chen (Southeast University, P.R. China)

5. **Angle Domain Sparse Code Multiplexing for the Massive MIMO Networks**
   Weidong Shao, Shun Zhang, Hongyan Li and Jianpeng Ma (Xidian University, P.R. China)

6. **Performance Analysis of Drone Small Cells under Inter-cell Interference**
   Jiejie Xie, Hai Wang, Aijing Li (PLA Amy Engineering University, P.R. China)

WCS-12: Massive MIMO (II)

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: Knowledge A
Chair: Zhongfeng Wang, Nanjing University, P.R. China

1. **Beam Domain PAPR Reduction for Massive MIMO Downlink**
   Luyao Ni and Shi Jin (Southeast University, P.R. China); Feifei Gao (Tsinghua University, P.R. China); Hai Lin (Osaka Prefecture University, Japan)

2. **Downlink Performance of Hybrid Precoding in Massive MIMO Systems Subject to Phase Noise**
   Yu Zhang, Dongming Wang Xinjiang, and Xiaohu You (Southeast University, P.R. China)

3. **Energy-Efficient Hybrid Precoding for Broadband Millimeter Wave Communication Systems**
   Fusheng Zhu, Shiwen He, Rui Li, Yongming Huang, and Xiaohu You (Southeast University, P.R. China)

4. **Antenna Selection in Massive MIMO Systems Utilizing the Submodular Function**
   Jie Zhang, Jiangtao Wang, and Yongchao Wang (Xidian University, P.R. China)

5. **Joint User Scheduling and Hybrid Precoding Design for MIMO C-RAN**
   Qi Hou, Shiwen He, Yongming Huang, Haiming Wang and Luxi Yang (Southeast University, P.R. China)

6. **Low-complexity Hybrid Precoding for Energy-efficient mmWave Transmission**
   Xiumei Yang, Mengying Zhang, Huaxia Chen, Ming-Tuo Zhou and Yang Yang (Shanghai Research Center for Wireless Communications, P.R. China)

WCS-13: Massive MIMO (III)

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: Knowledge B
Chair: Gang Wu, University of Electronic Science and Technology of China, P.R. China

1. **Power Allocation for Massive MIMO Systems with Jointly Correlated Rician Fading**
   Wenjie Zhu, Wenjin Wang, Xiao Li and Xiqi Gao (Southeast University, P.R. China)

2. **Antenna Grouping Assisted Spatial Modulation for Massive MIMO Systems**
   Xingxuan Zuo, Jiankang Zhang and Xiaomin Mu (Zhengzhou University, P.R. China)

7. **Semidefinite Programming based Omni-directional Beamforming for Massive MIMO**
   Dongliang Su, Yi Jiang and Xin Wang (Fudan University, P.R. China)

3. **Joint Power and Admission Control for Multi-pair Massive MIMO AF Relaying System**
   Yiping Zuo, Jian Zhu, Xuesong Liang (Nanjing University of Posts and Telecommunications, P.R. China); Shi Jin (Southeast University, P.R. China); Kai-Kit Wong (University College London, UK)

4. **Uplink Pilot Power Control with Genetic Algorithm for Massive MIMO Networks**
   Xiaoqing Zhang and Ju Liu (Shandong University, P.R. China); Shangbin Wu (Samsung R&D Institute UK); Chao Zhai and Shanshan Yu (Shandong University, P.R. China)

5. **Pilot Design for FDD Massive MIMO Systems with Channel Sparsity in Delay-Angle Domain**
   Xiangyu Yan, Huarui Yin, and Guo Wei (University of Science and Technology of China, P.R. China)

WNS-06: Routing and Grouping

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: Zijin
Chair: Aijing Li, PLA Army Engineering University, P.R. China

1. **A Robust Backup Routing Protocol for Neighbor Area Network in the Smart Grid**
   Zhuoran Ma, Xinyan Zhou, Ouyang Xuan, Xiaoyu Ji and Wenyuan Xu (Zhejiang University, P.R. China)

2. **A User-centric Clustering Method for Mobility Management in Ultra-dense Networks**
   Bo Hu, Yingying Wang, Chuanan Wang and Lei Wang (Beijing University of Posts and Telecommunications, P.R. China)

3. **User-Interest-Aware Multicast Group Formation in OFDM networks Using Matching Theory**
   Jie Zhao, Wenjun Xu, Xue Li and Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)

4. **Signal Strength Assistant Grouping for Lower Hidden Node Collision Probability in 802.11ah**
   Laipeng Zhang (Shanghai Jiao Tong University, P.R. China); Hua Li (Chongqing Qianwei Technologies Group Co., Ltd., P.R. China); Zhe Guo (Shanghai Research Institute of Microwave Technology, P.R. China); Lianghui Ding, Feng Yang, Liang Qian (Shanghai Jiao Tong University, P.R. China)

5. **Virtual Network Forwarding Graph Embedding Based on Tabu Search**
   Wenzhe Wang, Peilin Hong, Defang Lee, Jianing Pei and Lei Bo (University of Science and Technology of China, P.R. China)

6. **Short-Term Traffic Flow Prediction with Conv-LSTM**
   Yipeng Liu, Haifeng Zheng, Xinxin Feng and Zhonghui Chen (Fuzhou University, P.R. China)

WCS-14: mmWave

Date: Oct. 13, 2017
Time: 10:30am – 12:00pm
Room: U Lake
Chair: Chenhao Qi, Southeast University, P.R. China

1. **Beamforming Design for Interference Management in Millimeter Wave Cellular Networks with Partial CSI**
   Ying Ju and Xiayi Qiu (Xi'an Jiaotong University, P.R. China); Yuan Chen (Shaanxi Monitoring Station, State Radio Monitoring Center, P.R. China); Ke-Wen Huang, Qinye Yin and Hui-Ming Wang (Xi'an Jiaotong University, P.R. China)

2. **Robust Channel Estimation for Switch-Based mmWave MIMO Systems**
   Rui Hu, Jun Tong, Jiangtao Xi, Qinghua Guo and Yanguang Yu (University of Wollongong, Australia)

3. **Measurements and Modeling of Millimeter-Wave Channel at 28 GHz in the Indoor Complex Environment for 5G Radio Systems**
Shuangde Li (Nanjing University of Posts and Telecommunications, P.R. China)

4. **60 GHz Channel Measurements and Ray Tracing Modeling in an Indoor Environment**
Andong Zhou, Jie Huang, Jian Sun (Shandong University, P.R. China); Zhu Qiuming (Nanjing University of Aeronautics and Astronautics, P.R. China); Chengxiang Wang (Heriot-Watt University, UK); Yang Yang (Shanghai Reserach Center for Wireless Communication, P.R. China)

5. **A 6-bit Active Phase Shifter for Ku-Band Phased Arrays**
Yan Yao, Zhiqun Li, Guoxiao Cheng and Lei Luo (Southeast University, P.R. China)

6. **System Performance Evaluation for Millimeter Wave Wireless Communication**
Wenzheng Wang and Shiwen He (Southeast University, P.R. China); Yongpeng Wu (Shanghai Jiao Tong University, P.R. China); Haiming Wang, Yongming Huang and Luxi Yang (Southeast University, P.R. China)

WCS-15: NOMA (III)

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: Unique
Chair: Rose Qingyang Hu, Utah State University, USA

1. **Performance Analysis of Non-regenerative Relay Assisted NOMA System**
Di Zhang (North China Electric Power University, P.R. China); Yuanwei Liu (King's College London, UK); Zhiguo Ding (Lancaster University, UK); Zhenyu Zhou (North China Electric Power University); Arumugam Nallanathan (Queen Mary University of London, UK)

2. **Resource Allocation for Downlink Joint Space-Time and Power Domain Non-Orthogonal Multiple Access**
Hong Wang, Zhaoyang Zhang and Xiaoming Chen (Zhejiang University, P.R. China)

3. **A Low-Complexity Non-Orthogonal Multiple Access System Based on Rate Splitting**
Ye Zhu, Zhaoyang Zhang and Xianbin Wang (Zhejiang University, P.R. China); Liang Xuesong (Nanjing University of Posts and Telecommunications, P.R. China)

4. **An Minorization-Maximization based Hybrid Precoding in NOMA-mMIMO**
Yuyan Zhao (Nanjing University of Posts and Telecommunications, P.R. China); Wei Xu and Shi Jin (Southeast University, P.R. China)

5. **Effect of Clipping on the Achievable Rate of Non-Orthogonal Multiple Access with DCO-OFDM**
Weiwen Chu, Jian Dang, Zaichen Zhang and Liang Wu (Southeast University, P.R. China)

SPS-09: Signal Processing for Emerging Communication Systems

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: Perseverance
Chair: Weiwei Yang, PLA Army Engineering University, P.R. China

1. **Modeling the energy consumption of programs: thermal aspects and energy/frequency convexity rule (Invited Paper)**
Karel De Vogeleer (Hypervirtu, Belgium), Kameswar Rao Vaddina, Florian Brandner (LTCI - TELECOM ParisTech - University of Paris-Saclay, France), Pierre Jouvelot (MINES ParisTech, PSL Research University, France), Gerard Memmi (LTCI - TELECOM ParisTech - University of Paris-Saclay, France)

2. **Exploiting NOMA into Socially Enabled Computation Offloading**
Yutong Ai and Li Wang (Beijing University of Posts and Telecommunications, P.R. China); Bingli Jiao (Peking University, P.R. China); Kwang-Cheng Chen (University of South Florida, USA)

3. **Capacity of Wireless Powered Communication Systems over Rician Fading Channels**
Feiran Zhao (Zhejiang University, P.R. China); Hai Lin (Osaka Prefecture University, Japan); Caijun Zhong (Zhejiang University, P.R. China); Zoran Hadzi-Velkov (Ss. Cyril and Methodius University in Skopje, Macedonia, the former Yugoslav Republic of); George K. Karagiannidis (Aristotle University of Thessaloniki, Greece); Zhaoyang Zhang (Zhejiang University, P.R. China)

4. **Density Evolution Analysis of LDPC-coded SCMA Systems**
Yanming Hao, Kexin Xiao, Zhiyong Chen and Bin Xia (Shanghai Jiao Tong University, P.R. China)

5. **A Construction of (5,3) MDS Codes with Optimal Repair Capability for Distributed Storage Systems**
Sheng Guan, Haibin Kan and Xin Wang (Fudan University, P.R. China)

6. **A Hybrid Interference Suppression Scheme for Global Navigation Satellite Systems**
Kun Dong (University of Science and Technology of China, P.R. China); Zilong Zhang (The 28th Research Institute of China Electronics Technology Group Corporation, P.R. China); Xiaodong Xu (University of Science and Technology of China, P.R. China)

SPS-10: Estimation and Detection (I)

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: Revolution
Chair: Wei Xu, Southeast University, P. R. China

1. **Underwater Acoustic Channel Estimation via Fast Bayesian Matching Pursuit**
Huajian Chen and Chenhao Qi (Southeast University, P.R. China)

2. **Training Sequence Design for Channel Estimation and IQ Imbalance Compensation in GFDM Systems**
Nan Tan, Shiwen He, Haiming Wang, Yongming Huang and Luxi Yang (Southeast University, P.R. China)

3. **Regularized Equalization for OFDM Systems with BEM-Based Channel Estimation**
Wei Han, Jun Tong, Qinghua Guo, Jiangtao Xi and Yanguang Yu (University of Wollongong, Australia)

4. **A Signal Detection Algorithm Based on Chebyshev Accelerated Symmetrical Successive Over-Relaxation Iteration for Massive MIMO Systems**
   Xiaoxiang Liu and Jing Zhang (Nanjing University of Posts and Telecommunications, P.R. China)

5. **Residual Correlation Matrix Detection Based Blind Sub-Nyquist Spectrum Sensing for Cognitive Radio Networks**
   Peihan Qi, Zan Li, Wenchi Cheng, Jiangbo Si (Xi'dian, P.R. China); Qihui Wu (Nanjing University of Aeronautics and Astronautics, P.R. China)

WCS-16: Massive MIMO-Channel Estimation

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: Knowledge A
Chair: Feng Shu, Nanjing University of Science and Technology, P.R. China

1. **Pilot Reuse with a Large Number of Antennas: Performance Analysis and Pilot Contamination Reduction**
   Junhui Zhao and Shanjin Ni (Beijing Jiaotong University, P.R. China); Yi Gong (South University of Science and Technology of China, P.R. China); Feifei Gao (Tsinghua University, P.R. China)

2. **Massive MIMO Uplink Transmission with Pilot Extension and System-Level Analysis**
   Yang Li (Xi'an Jiaotong University, P.R. China); Rui Wang (The South University of Science and Technology of China, P.R. China); Haisheng Tan (University of Science and Technology of China, P.R. China); Yifan Chen (The University of Waikato, New Zealand); Qingfeng Zhang (South University of Science and Technology of China, P.R. China)

3. **Low-Complexity Channel Estimation Based on Weighted Kapteyn Series Expansion for Massive MIMO Systems**
   Zhengquan Li, Bing Wang, Yaoyao Sun and Feng Yan (Southeast University, P.R. China); Song Xing (California State University, Los Angeles, USA); Lianfeng Shen (Southeast University, P.R. China)

4. **Millimeter-Wave Channel Estimation with Interference Cancellation and DOA Estimation in Hybrid Massive MIMO Systems**
   Weihan Liu (Shanghai Jiao Tong University, P.R. China); Yang Li (Wuhan Maritime Communication Research Institute, P.R. China); Feng Yang, Lianghui Ding and Cheng Zhi (Shanghai Jiao Tong University, P.R. China)

5. **Low Complexity Signal Detector Based on SSOR Iteration for Large-Scale MIMO Systems**
   Yaoyao Sun, Zhengquan Li, Chi Zhang, Rui Zhang, Feng Yan and Lianfeng Shen (Southeast University, P.R. China)

6. **RaptorQ Code based Concurrent Transmissions in Dual Connectivity LTE Network**
   Jiaying Li and Cunqing Hua (Shanghai Jiao Tong University, P.R. China)

WCS-17: Massive MIMO-Detection

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: Knowledge B
Chair: Zhongfeng Wang, Nanjing University, P.R. China

1. **Reduced Complexity Message Passing Detection Algorithm in Large-Scale MIMO Systems**
   Haochuan Zhu, Jun Lin and Zhongfeng Wang (Nanjing University, P.R. China)

2. **Iterative SOR Detection and Decoding for LDPC-Coded Massive MIMO Systems**
   Anlan Yu and Shusen Jing (Southeast University, P.R. China); Yeong-Luh Ueng (Tsing Hua University, Taiwan); Xiaohu You and Chuan Zhang (Southeast University, P.R. China)

3. **On Uplink Performance of Massive MIMO Relaying with Hybrid Multiuser Detection**
   Yucheng Wang, Jindan Xu, Hong Shen and Wei Xu (Southeast University, P.R. China)

4. **Belief Propagation Detection Based on Max-Sum Algorithm for Massive MIMO Systems**
   Yaping Zhang, Lulu Ge, Xiaohu You and Chuan Zhang (Southeast University, P.R. China)

5. **Low-complexity Detection Algorithms Based on Matrix Partition for Massive MIMO**
   Haijian Wu and Jun Lin (Nanjing University, P.R. China); Chuan Zhang (Southeast University, P.R. China); Zhongfeng Wang (Nanjing University, P.R. China)

6. **D Hybrid Eavesdropping Approach Against Energy-Ratio-Based Detection**

   Menghan Wang, Hao Wei, and Dongming Wang (Southeast University, P.R. China); Xiaoyun Hou (Nanjing University of Posts and Telecommunications, P.R. China)

WNS-07: Scheduling and QoS

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: Zijin
Chair: Feng Yan, Southeast University, P.R. China

1. **Energy-Efficient Scheduling for Buffer-Aided Relaying with Opportunistic Spectral Access (Invited Paper)**
   Kunlun Wang, Yang Yang, and Ming-Tuo Zhou (Shanghai Research Center for Wireless Communications, P.R. China); Wen Chen (Shanghai Jiao Tong University, P.R. China); Guoqiang Mao (The University of Technology Sydney Data 61, Australia)

2. **Group-DCI Based Scheduling Scheme for Ultra-Reliable and Low Latency Communications**
   Ting Liu, Man Dai and Fei Zesong (Beijing Institute of Technology, P.R. China); Shuqiang Xia, Xianghui Han, and Jing Shi (ZTE Corporation, P.R. China)

3. **Optimal Energy Harvesting-Aided Spectrum Sensing Sensors Scheduling in Cognitive Radio Networks**
   Yuxi Qiang, Guangyue Lu, Boyang Liu, and Yuxin Li (Xi'an University of Posts and Telecommunications, P.R. China)

4. **Elastic Local Breakout Strategy and Implementation for Delay-Sensitive Packets with Local Significance**
Yongkang Li, Zhiyuan Jiang, An Xu, Sheng Zhou, and Zhisheng Niu (Tsinghua University, P.R. China)

5. **IPTV User QoE Prediction Based on the LSTM Network**
Jiali Mao, Ruochen Huang, Xin Wei, and Qiuxia Bao (Nanjing University of Posts and Telecommunications, P.R. China); Zhenjiang Dong (Cloud & IT Institute, ZTE Corporation, P.R. China); Yi Qian (University of Nebraska - Lincoln, USA)

6. **A Resource Scheduling Scheme Based on Utility Function in CoMP Environment**
Xing Xu, Zhifeng Zhao, Rongpeng Li, and Honggang Zhang (Zhejiang University, P.R. China)

WCS-18: Visible Light Communication

Date: Oct. 13, 2017
Time: 14:00pm – 15:30pm
Room: U Lake
Chair: Liang Wu, Southeast University, P.R. China

1. **Optical Spatial Modulation Based Visible Light Communications with an Arbitrary Number of Transmitters**
Jian-Xia Zhu (Southeast University, P.R. China); Jin-Yuan Wang (Nanjing University of Posts and Telecommunications, P.R. China); Nan Li, Jun-Bo Wang and Ming Chen (Southeast University, P.R. China)

2. **On the BER Performance of Relay-Aided Free-Space Optical Communications in the Presence of Input-Dependent Noise**
Jin-Yuan Wang (Nanjing University of Posts and Telecommunications, P.R. China); Jun-Bo Wang, Jian-Xia Zhu, Cheng Liu and Ming Chen (Southeast University, P.R. China)

3. **Design of Polar Codes for Multicolor Visible Light Communication Systems**
Ming Jiang, Qiuyu Zhu, Chunming Zhao (Southeast University, P.R. China)

4. **Optical Spatial Modulation with DHT-Based OFDM in Visible Light Communication Systems**
Yali Cao, Xiaotian Zhou, Jian Sun (Shandong University, P.R. China); Wensheng Zhang (Shandong University, P.R. China); Chengxiang Wang (Heriot-Watt University, UK)

5. **Outage Performance Analysis for Outdoor Vehicular Visible Light Communications**
Sheng-Hong Lin (Nanjing Institute of Mechatronic Technology, P.R. China); Jin-Yuan Wang (Nanjing University of Posts and Telecommunications, P.R. China); Xu Bao and Yun Li (Huaiyin Institute of Technology, P.R. China)

6. **An advanced polar coding scheme for Visible Light Communication system**
Chunmei Yao, Jian Song, Wensheng Zhang and Xiaotian Zhou (Shandong University, P.R. China)

WCS-19: Cooperative MIMO and DAS

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: Unique
Chair: Dongming Wang, Southeast University, P.R. China

1. **Sparse Beamforming Based Energy Efficiency Optimization for Distributed Antenna Systems**
Jun Xu, Pengcheng Zhu, Jiamin Li, Xiaohu You (Southeast University, P.R. China)

2. **Interference Channel State Based User-Centric Cell Clustering for Uplink Multicell Cooperation**
Zhe Zhang, Ning Wang, Jiankang Zhang, Jin Jin and Xiaomin Mu (Zhengzhou University, P.R. China)

3. **Downlink Ergodic Rate Analysis of DAS with Linear Beamforming under Pilot Contamination**
Lingling Zhang, Pengcheng, Jiamin Li, and Juan Cao (Southeast University, P.R. China)

4. **Sparse Beamforming for Interlaced Clustering in Distributed Antenna Systems**
Xinjiang Xia, Yu Zhang, Jiamin, Pengcheng Zhu, Dongming Wang, and Xiaohu You (Southeast University, P.R. China)

5. **Coastal Communications Based on Cellular Networks with Distributed Antennas**
Xu Yanli, Feng Liu and Shengming Jiang (Shanghai Maritime University, P.R. China); Xujie Li (Hohai University, P.R. China)

6. **A High Efficient Cooperative Transmission Method for Multi-satellite Collocation Systems**
Qiuyuan Tang, Lina Zhu, Tian Li, and Lin Bai (Beihang University, P.R. China)

SPS-11: Estimation and Detection (II)

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: Perseverance
Chair: Jun Li, Nanjing University of Science and Technology, P.R. China

1. **Compressive Sensing Based Multiuser Detection for Asynchronous Machine-to-Machine Systems**
Zhaohui Yang, Ming Chen, Yinlu Wang and Yijin Pan (Southeast University, P.R. China)

2. **Detection with Compressive Measurements Corrupted by Sparse Errors**
Wenbo Xu and Zhihua Yan (Beijing University of Posts and Telecommunications, P.R. China); Yun Tian (People's Public Security University of China, P.R. China); Yupeng Cui and Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)

3. **A Joint Algorithm of Parameters Estimation for Frequency-Hopping Signal Based on Sparse Recovery**
Xiaolin Zhang, Xiaofang Hu and Xue Dong (Harbin Engineering University, P.R. China)

4. **FompNet: Compressive Sensing Reconstruction with Deep Learning over Wireless Fading Channels**
Lei Bo, Hancheng Lu, Yujiao Lu, and Jianwen Meng and Wenzhe Wang (University of Science and Technology of China, P.R. China)

5. **Fast Recovery of Non-Negative Sparse Signals Under Heterogeneous Noise**
Lei Hu, Zemin Wu, Lei Zhang and Chang Tian (PLA Army Engineering University, P.R. China)

6. **A Low Side-lobe Waveform Design Method for Random Hopping Frequency Signal**
Zhikun Liao, Dawei Lu, Jiemin Hu and Jun Zhang (National University of Defense Technology, P.R. China)

SPS-12: Emerging Signal Processing and Its applications

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: Revolution
Chair: Yongming Huang, Southeast University, P.R. China

1. **A Compilation Method for Zero Overhead Loop in DSPs with VLIW**
Rui Chang, Jun Wu, and Haoqi Ren (Tongji University, P.R. China)

2. **Reversible Data Hiding Based on Directional Prediction and Multiple Histograms Modification**
Song Chang and Yifeng Zhang (Southeast University, P.R. China); Guojun Lu (Monash University, Australia)

3. **A Synthesis Flow for Fast Convolution Unit Based on Molecular Reactions**
Yuchen Zhuang, Lulu Ge (Southeast University, P.R. China); Wei Wei and Jing Zhao (Nanjing University, P.R. China); Xiaohu You and Chuan Zhang (Southeast University, P.R. China)

4. **Synthesizing Markov Chain with Reversible Unimolecular Reactions**
ZiYuan Shen and Lulu Ge (Southeast University, P.R. China); Wei Wei and Jing Zhao (Nanjing University, P.R. China); Xiaohu You and Chuan Zhang (Southeast University, P.R. China)

5. **Efficient Fast Convolution Architecture Based on Stochastic Computing**
Runing Xu (Southeast University, P.R. China); Bo Yuan (City University of New York, USA); Xiaohu You and Chuan Zhang (Southeast University, P.R. China)

6. **Convergence Analysis of a Correntropy Induced Metric Constrained Mixture Error Criterion Algorithm**
Yanyan Wang and Yingsong Li (Harbin Engineering University, P.R. China); Felix Albu (Valahia University of Targoviste, Romania); Rui Yang (Huazhong Agricultural University, P.R. China)

WCS-20: HetNets

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: Knowledge A
Chair: Feng Yan, Southeast University, P.R. China

1. **On the Local Delay and Energy Efficiency of HetNets under Poisson Cluster Processes**
Xiaojie Dong (Harbin Institute of Technology, Shenzhen, P.R. China); Fu-Chun Zheng (University of York, UK); Xu Zhu (University of Liverpool, UK)

2. **Utility Function Optimization based Joint User Association and Content Placement in Heterogeneous Networks**
Hong Chen, Qianbin Chen, and Rong Chai (Chongqing University of Posts and Telecommunications, P.R. China); Dongmei Zhao (McMaster University, Canada)

3. **Analysis of Non-Best User Association Scheme in K-tier Heterogeneous Networks**
Meng Zhou, Xiangdong Jia, Mangang Xie, and Weijie Tan (Northwestern Polytechnical University, P.R. China); Weiqiang Tan (Guangzhou University, P.R. China)

4. **Network-Sensitive Adaptive LAA LBT Strategy for Downlink LAA-WiFi coexistence**
Wei Wang, Pingping Xu, and Yuan Zhang (Southeast University, P.R. China); Hongyun Chu (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R. China)

5. **Performance Analysis of LBT Cat4 Based Downlink LAA-WiFi Coexistence in Unlicensed Spectrum**
Wei Wang, Pingping Xu, and Yuan Zhang (Southeast University, P.R. China); Hongyun Chu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, P.R. China)

6. **The Cell Zooming Algorithm for Energy Efficiency Optimization in Heterogeneous Cellular Networks**
Zhen Zhang, Fangfang Liu and Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China)

WCS-21: System and Network Design

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: Knowledge B
Chair: Jiaheng Wang, Southeast University, P.R. China

1. **Fill the Gap: A Bidirectional Message Ferry System for Wireless Devices**
Yongan Guo (Nanjing University of Posts and Telecommunications, P.R. China); Jie Deng (Queen Mary University of London, UK)

2. **Design and Implementation of a Novel 100G Optical Interface Protocol Converter**
Kaixiong Zhou, Xin Huang and Chaoxiang Shi (Chongqing University of Posts and Telecommunications, P.R. China); Jianxin Chang and Meng Gao (CNMP Networks, INC Beijing, P.R. China)

3. **Optimal Design of 3D MIMO SWIPT Systems with Tilt Adaptation**
Lixing Fan (Southeast University, P.R. China); Honghui Wang (Northwestern Polytechnical University, P.R. China); Yongming Huang and Luxi Yang (Southeast University, P.R. China)

4. **Design and Demonstration of An Indoor Visible Light Communication Network with Dynamic User Access and Resource Allocation**
Mian Zeng, Kaixiong Zhou, Chen Gong, Shun Lou, Xianqing Jin, and Zhengyuan Xu (University of Science and Technology of China, P.R. China)

5. **Pseudo-Analog Wireless Stereo Video Transmission in Hardware Acceleration**
Yao Jiang, Pengfei Xia, Jun Wu, Shi Chen, and Baoye Zhang (Tongji University, P.R. China)

6. **Neural Networks for Demodulating the Output Signals of Nonlinear Systems with Memory**
Xiaomin Li, Chunming Zhao, and Ming Jiang (Southeast University, P.R. China)

WNS-08: Software Defined Networks

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: Zijin
Chair: Xiaohu Ge, Huazhong University of Science and Technology, P.R. China

1. **State Reduction in Wireless Software Defined Network with LSP Multiplexing**
   Liaoruo Huang, Qingguo Shen, Feng Zhou and Xiaoyu Cui (PLA Army Engineering University, P.R. China); Wenjuan Shao (Nanjing University of Science and Technology, P.R. China)

2. **Control Plane Delay Minimization based SDN Controller Placement Scheme**
   Lei Zhu, Rong Chai and Qianbin Chen (Chongqing University of Posts and Telecommunications, P.R. China)

3. **Dynamic Switch Migration Algorithm with Q-learning Towards Scalable SDN Control Plane**
   Min Zhu, Hua Qu and Jihong Zhao (Xi'an Jiaotong University, P.R. China)

4. **Coflow-Aware Dynamic Routing for SDN-based Data Center Networks**
   Yifan Li and Jie Li (University of Tsukuba, Japan); Yusheng Ji (National Institute of Informatics, Japan); Yu Gu (Hefei University of Technology, P.R. China)

5. **Delay Minimization based Joint Routing and Flow Allocation for Software Defined Networking**
   Feiying Meng, Rong Chai and Chenlu Zhang (Chongqing University of Posts and Telecommunications, P.R. China)

6. **VNF Deployment and Routing for NFV-enabled Multicast: A Steiner Tree-based Approach**
   Yulun Cheng and Longxiang Yang (Nanjing University of Posts and Telecommunications, P.R. China)

WCS-22: System Performance Analysis

Date: Oct. 13, 2017
Time: 16:00pm – 17:30pm
Room: U Lake
Chair: Kanglian Zhao, Nanjing University, P.R. China

1. **A General Analytical Approach for Outage Analysis of HARQ-IR over Correlated Fading Channels**
   Zheng Shi and Shaodan Ma (University of Macau, P.R. China); Guanghua Yang (Jinan University, P.R. China); Kam Weng Tam (University of Macau, P.R. China); Ming-Hua Xia (Sun Yat-sen University, P.R. China)

2. **Dual-Polarized Spatial Modulation Performance Analysis over Nakagami-m Fading Channels**
   Zhilan Lyu, Kanglian Zhao, Wenfeng Li, and Haibo Zhou (Nanjing University, P.R. China)

3. **Channel Capacity and Lower Bound for Ambient Backscatter Communication Systems**
   Wenjing Zhao and Gongpu Wang (Beijing Jiaotong University, P.R. China); Feifei Gao (Tsinghua University, P.R. China); Yulong Zou (Nanjing University of Posts and Telecommunications, P.R. China); Saman Atapattu (University of Melbourne, Australia)

4. **Downlink Spectral Efficiency of Multi-User Distributed Antenna Systems Under a Stochastic Geometry Model**
   Baolai Cai, Chentao Yue, Jiamin Li, and Pengcheng Zhu (Southeast University, P.R. China)

5. **Achievable Rate of DCO-FBMC with Low-Resolution ADCs for Optical Wireless Communication**
   Mengting Wu, Jian Dang, Zaichen Zhang, and Liang Wu (Southeast University, P.R. China)

6. **Correlation Analysis and Adaptive Carrier Sensing Adjustment in Dense Random Wireless Networks**
   Zhaoming Ding (Southeast University, P.R. China); Song Xing (California State University, Los Angeles, USA); Feng Yan (Southeast University, P.R. China); Shuguang Deng (Hunan City University, P.R. China); Lianfeng Shen (Southeast University, P.R. China)