

2013 IEEE Wireless Communications and Networking Conference

(WCNC 2013)

**Shanghai, China
7 – 10 April 2013**

Pages 1-794



**IEEE Catalog Number: CFP13WCM-POD
ISBN: 978-1-4673-5938-2**

Program

T1: Towards 4G: LTE and LTE-Advanced

Hyung G. Myung

The current 3rd generation (3G) cellular wireless systems are evolving into 4th generation (4G). As a pathway to 4G, 3GPP developed Long Term Evolution (LTE). In terms of air interface techniques, LTE system uses OFDMA-based multicarrier modulation, MIMO techniques, and other advanced features to greatly improve the mobile wireless services. In this tutorial, we first survey the underlying techniques of the 4G systems such as OFDMA, SC-FDMA, MIMO, and fast multi-carrier resource scheduling. Then, we give technical overview of LTE and LTE-Advanced in detail.

Towards 4G: LTE and LTE-Advanced

Hyung G Myung (Qualcomm, USA)

T2: Network Processing with Bayesian Graphical Models

Henk Wymeersch

Bayesian graphical models, such as factor graphs, are gaining increasing importance in the systematic development of algorithms in communication receivers and communication networks. Recent developments have revealed ties between graphical models, statistical physics, variational methods, and convex optimization. Most of these developments originate from the machine learning and statistics communities, and there is an urgent need for communications researchers to become aware of these developments and apply state-of-the-art inference methods to important problems in our own field. This tutorial strives to address this need. It provides an overview of the theory behind graphical models and explores deeper connections between different algorithms. The theory will first be applied to a centralized problem (data detection in a wireless receiver), and then to a number of distributed problems (tracking, network synchronization, beamforming).

Network Processing with Bayesian Graphical Models

Henk Wymeersch (Chalmers University of Technology, Sweden)

T3: Resource Allocation in Wireless Physical Layer Security

Lingyang Song, Zhu Han

Wireless physical layer security is an emerging security concept that achieves perfect secrecy data transmission between the intended network nodes, while the malicious nodes obtain zero information. It serves an alternative to cyber encryption, and attracts great attentions recently. Most of research for physical layer security is from the information theory perspectives. However, less study is investigated from the resource allocation point of view. This tutorial will take a comprehensive and coordinated approach in presenting the ways of physical layer security enhancement with the use of resource allocation tools (such as game theory). There are four main objectives of this tutorial. First, we intend to provide a general introduction to physical-layer security from information, signal processing, and radio resource allocation points of view. Second, we discuss how the source nodes can improve the performance by jointly cooperate using collaborative beamforming and relaying techniques. Third, we intend to present the use of game theory along with resource optimization for security improvement, and topics such as non-cooperative game, auction game, coalition game etc. will be provided. Finally, we summarize and categorize the working scenarios of unsecure networks, including OFDMA based cellular networks, relay networks, and jammer aided networks, etc. Some cross-layer issues by jointly considering signal processing and resource allocation will be also provided.

Resource Allocation in Wireless Physical Layer Security

Lingyang Song (Peking University, P.R. China); Zhu Han (University of Houston, USA)

T4: Mobility Management in Future Wireless Networks: Past, Present, and Future

Jong-Hyouk Lee, Sangheon Park

Wireless and cellular network technologies continue to grow and converge with the Internet. Mobility support is required in any types of wireless devices for session continuity. In this tutorial, the basics and recent advances of mobility management are provided while recent emerging issues such as Distributed Mobility Management (DMM) in Flat Architectures and Mobility Management in Information Centric Networks (ICNs) are fully discussed. With increasing usage of mobile devices like tablets and smartphones, we have been witnessing an explosion of mobile Internet traffic. In order to cope with recent traffic growth, current mobile network architectures are being flattened and IP mobility support protocols are thus required to be adopted in the evolution of mobile network architectures. Existing IP mobility support protocols developed by the IETF are all relying on centralized mobility anchors that suffer from inefficient routing and scalability issues due to rapidly increasing traffic volumes over mobile networks. In that vein, DMM is a new approach attracting attention from telecommunication and Internet communities, as it is more appropriate for the recent explosion of mobile Internet traffic. Current activities of the IETF standardization and possible two different approaches are presented with comparison results showing features of DMM against the existing mobility support protocols. ICNs introduce revolutionary network architectures that focus on contents access rather than end-point communications. ICNs leverage in-network caching and contents replication for fast access. To realize ICNs, different projects (e.g., data-oriented network architecture (DONA), content-centric networking (CCN), publish-subscribe Internet routing paradigm (PRISP), Network of Information (NetInf)) are being conducted. Moreover, the Internet Research Task Force (IRTF) has established the Information-Centric Networking Research Group (ICNRG) in 2012. Although mobility management in ICNs has not been extensively investigated in the literature, it is obvious that mobility support is one of the most important requirements in ICNs since mobile hosts will dominate fixed hosts in future ICNs. In this tutorial, the state of the art on ICNs is first surveyed and mobility-related issues in ICNs are identified. Also, design considerations and the proposed approaches for mobility management of contents consumer and provider will be presented.

Mobility Management in Future Wireless Networks: Past, Present, and Future

Jong-Hyoun Lee (TELECOM Bretagne, France); Sangheon Park (Korea University, Korea)

T5: Towards Spectrum and Energy Efficient Heterogeneous Wireless Networks

Rose Qingyang Hu, Yi Qian, Qian (Clara) Li

The proliferation of new applications, e.g., mobile TV, Internet gaming, large file transfer, and the development of user terminals, e.g., smart phones, notebooks, etc., has dramatically increased user traffic and network load. As the spectral efficiency of a point-to-point link in cellular networks approaches its theoretical limits, there is a need for increase in the node density to further improve network capacity and coverage to address the ever increasing traffic demand. Furthermore, the fast growing data traffic and dramatic expansion of network infrastructures will inevitably trigger tremendous escalation of energy demand and energy consumption in wireless networks, which will directly result in the increase of greenhouse gas emission and poses ever increasing threats to the environmental protection and sustainable development. Green evolution has become another urgent need for wireless networks today. The wireless network research should meet the challenges raised by the high demand of both wireless traffic and energy consumption. This tutorial discusses the need for such an alternative strategy, where low power nodes are overlaid within a macro network, creating a wireless Heterogeneous Network (HetNet). In this tutorial we explore a broad scope of technical areas that are under investigation in the context of HetNets. These areas include node/client cooperation, interference management, mobility, green radio, applications and services. This tutorial shall provide deep insights into the motivations and technology enablers for the emerging area as well as the HetNet development and deployment status.

Towards Spectrum and Energy Efficient Heterogeneous Wireless Networks

Rose Qingyang Hu (Utah State University, USA); Yi Qian (University of Nebraska-Lincoln, USA);
Qian (Clara) Li (Intel Corporation, P.R. China)

T6: Cooperative Wireless Communications

Lajos Hanzo

In the early days of wireless communications the research community used to view multipath-induced dispersion as an undesirable propagation phenomenon, which could only be combated with the aid of complex channel equalizers. The longer the Channel Impulse Response (CIR) was, the more complex the channel equalizer became. However, provided that the complexity of a sufficiently high-memory channel equalizer was affordable, the receiver could benefit from the fact that the individual propagation paths faded independently. To elaborate a little further, even if one of the paths was experiencing a high attenuation, there was a good chance that some of the other paths were not, which led to a potential diversity gain.

However, if the channel does not exhibit several independently fading paths, techniques of artificially inducing diversity may have to be sought. A simple option is to employ a higher direct-sequence spreading factor, which results in a higher number of resolvable multipath components and hence in an increased diversity gain. Naturally, this is only possible if either the available bandwidth may be extended according to the spreading factor or the achievable bitrate is reduced by the same factor. A whole host of classic diversity combining techniques may be invoked then for recovering the original signal.

An alternative technique of providing multiple independently faded replicas of the transmitted signal is to employ relaying, distributed space-time coding or some other cooperation-aided procedure, which is the subject of this course. One could also view the benefits of

decode-and-forward based relaying as receiving and then flawlessly regenerating and re-transmitting the original transmitted signal from a relay - provided of course that the relay succeeded in error-freely detecting the original transmitted signal. This course reviews the current state-of-the-art and proposes a number of novel relaying and cooperation techniques. An important related issue is the availability or the absence accurate channel information, which leads to the concept of coherent versus non-coherent detection at the relays and at the destination. Similarly, the related initial synchronization issues also have to be considered. Naturally, when using hard-decisions in the transmission chain, we discard valuable soft-information, which results in an eroded performance, albeit also reduces the complexity imposed. Hence the hard- versus soft-decoding performance tradeoff will also be explored in the course, along with the benefits of interleaved random space-time coding invoked for multi-source cooperation. Another important aspect of cooperative communications is constituted by the so-called Cooperative Multi-Point Processing (COMP) technique, which jointly processes all the signals gleaned at all the base-stations (BSs), which will also be covered by the proposed course. In most existing studies the interconnection of all the BSs is assumed to be perfect. By contrast, in this course realistic dispersion-contaminated optical interconnections will be considered.

Cooperative Wireless Communications

Lajos Hanzo (University of Southampton, United Kingdom)

T10: Visible Light Communication: Concept, Technology, Challenges and Possibilities

Navin Kumar

It is believed that high speed data transmission will play an important role in our daily life. Multimedia information is envisaged to be available at any place and at any time, and wireless access networks constitute a key element for achieving these goals. Moreover, wireless communication systems now deploy several access technologies. However, radio frequency (RF) bandwidth at frequency ranges which allow reasonable spatial coverage is a limiting factor. Therefore, alternative wireless transmission means as supplementary technology have to be explored. Optical wireless communication system especially Visible Light Communication (VLC) using Light Emitting Diodes (LEDs) offers the potential for such supplementary system. The ultimate goal is to provide ubiquitous connectivity, integrating seamlessly operations in most common scenarios, ranging from fixed and low-mobility indoor environments in one extreme to high-mobility cellular systems in the other extreme. With a number of benefits such as license free, high bandwidth and low cost system; the VLC technology offers multiple potential applications. This tutorial will highlight the technology, concept, overall systems, challenges and the possibilities. A case study of outdoor safety application will also be presented.

Visible Light Communication: Concept, Technology, Challenges and Possibilities

Navin Kumar (Institute of Telecommunication & University of Aveiro, Portugal)

T11: Gigabit Wireless LAN: IEEE 802.11ac

Ahmad Reza Hedayat

Among the wireless technologies for 2.4GHz and 5GHz unlicensed bands, WiFi has significantly transformed our networking culture at home, office, and public places to the extent that its presence has become a necessity. On the other hand, such presence has transformed adjacent technologies like cellular communications and smart grid by its off-loading capacity and low-power capability respectively. To fulfill the new demands, IEEE and the WiFi industry are delivering the 802.11ac that has astonishing maximum raw data rate of 6.9Gbps with the fairest techniques to coexist with other users of the unlicensed band. This tutorial offers a deep dive analysis of 802.11ac and its techniques.

The IEEE 802.11ac uses channel bonding, denser modulation, and more advanced MIMO and multi-user techniques along with efficient aggregation in MAC layer to deliver its promise of multi-gigabit rates and efficient transmission for high-density environments. Channel bonding is taken to its new limits of 80MHz, 160MHz and even non-adjacent 80+80MHz. While channel bonding may seem trivial in licensed bands, it is a challenge in unlicensed bands to bond multiple channels and to be fair to others transmitters including legacy and non-WiFi devices, and 802.11ac achieves this by new delicate mechanisms in PHY and MAC layers. On the multiple-antenna front, 802.11ac offers MIMO techniques with up to eight spatial streams and a unique and industry-wide accepted channel sounding mechanism. Moreover, for the first time in any WLAN standard, the new and advanced multi-user MIMO technique makes an accesspoint capable of transmitting multiple frames to different clients, all at the same time and over the same frequency spectrum. This is a transformation from wireless hub (e.g. in previous 802.11 standards) to a wireless switch on the downlink. Considering the contentious-based MAC layer, MU-MIMO is a challenging technique that takes WLAN to a new limits. Since 802.11ac is a 5GHz-only standard, this tutorial also addresses the worldwide state of the unlicensed 5GHz spectrum and the techniques that need to be implemented to respect the activity of various radars which are the primary users of a subset of this spectrum. IEEE 802.11ac has also influenced other upcoming amendments in IEEE 802.11. We will give overview of IEEE 802.11ah and 802.11af where the former is being designed for sub 1GHz bands with sensory and smart-grid applications in mind, and the latter is being designed for TV white spaces. Both of these amendments are expected to extend the role of WiFi further in new directions and both have benefited from the techniques that have been developed in 802.11ac.

T7: Heterogeneous Networks - Theory and Standardization in LTE

Joydeep Acharya, Long Gao, Sudhanshu Gaur

In this tutorial, we provide researchers and academicians with an overview and insight into the deployment of heterogeneous networks for indoor and outdoor environments within the framework of 3GPP-LTE and LTE-Advanced. We demonstrate the need for heterogeneous networks in order to improve capacity and coverage of cellular systems. We discuss the underlying communication theory of such a network and the practical challenges faced during deployment. We cover the standardization efforts that have gone into incorporating heterogeneous network deployments within 3GPP. We present case studies of real world heterogeneous networks to illustrate the challenges and engineering performance trade-offs. In this tutorial we thus focus on core theory and network design aspects as well as business case for the operators to illustrate why heterogeneous networks are expected to be an integral part of current and future cellular systems.

Heterogeneous Networks - Theory and Standardization in LTE

Joydeep Acharya (Wireless Systems Research Lab & Hitachi America Ltd., USA); Long Gao (Hitachi America, Ltd, USA); Sudhanshu Gaur (Hitachi America Ltd, USA)

T8: Game-Theoretic Techniques for the Energy Efficiency of Wireless Communications and Sensor Networks

Marco Luise, Giacomo Bacci

The issue of energy efficiency, spectral efficiency, and resource optimization has attracted a huge interest by the information and telecommunication technology (ICT) community in the last decade, as witnessed by the vast literature available in this topic. In the field of wireless communications, efficiency can be achieved by operating at all different layers of the network, spanning from system architectures and protocols, to transmission techniques, and to opportunistic spectrum sharing, just to mention a few notable examples. Similarly, sensor networks with tight energy-efficiency constraints on the sensing nodes need careful exploitation of the available energy resources to send out the sensed values. Design and optimization methods of such networks are benefiting from the adoption of sophisticated optimization techniques at large.

Game theory, traditionally studied and applied in the areas of economics, political science, biology and sociology, has recently emerged as an effective framework for the design of a wireless network, since it provides analytical tools to predict the outcome of interactions among rational entities with conflicting interests, like communication nodes. Interaction of the users in a wireless network for communications or sensing can be modeled as a game in which the user terminals are the players in the game competing for network resources (i.e., bandwidth and/or energy), which are typically scarce. Any action taken by a user affects the performance of other users as well, and game theory turns out to be a natural tool for investigating this interplay. This tutorial provides an overview of the relevant applications of game theory in wireless networks, focusing on state-of-the-art techniques for resource allocation. The very basics concepts of game theory are introduced by means of many simple examples, and special emphasis is put on how to translate a real-world problem into an analytical game model.

Game-Theoretic Techniques for the Energy Efficiency of Wireless Communications and Sensor Networks

Marco Luise (University of Pisa & WISER srl, Italy); Giacomo Bacci (University of Pisa & Wireless Systems Engineering and Research (Wiser) Srl, Italy)

T9: Spatial Modulation for MIMO Wireless Systems

Marco Di Renzo, Ali Ghayeb, Harald Haas

Future wireless communication systems deployment, including fourth generation (4G) cellular systems, will be based on the MIMO transmission technology. Conventional MIMO schemes usually take advantage of the many antennas available at the transmitter by simultaneously transmitting multiple data streams from all of them. Furthermore, common open-loop MIMO schemes usually assume that all transmit-antennas are simultaneously active at any time instance. By properly choosing the transmission matrices, both multiplexing and transmit-diversity gains can be obtained via space-time coding. As a consequence, higher data rates and smaller error performance are obtained at the cost of: i) increasing the signal processing complexity at the receiver, which is caused by the need to counteract the interference created by simultaneously transmitting many data streams; and ii) making more stringent the synchronization requirements among the transmit-antennas.

Furthermore, more recently, with the advent of the green and sustainable information and communication era, state-of-the-art MIMO schemes are facing two additional major challenges: i) the need of multiple RF chains at the transmitter to be able to simultaneously transmit many data streams, which do not scale with Moore's law and make the transmitter very bulky; and ii) the need of independent power amplifiers for each RF chain, each one being responsible of the vast majority of the power consumed at the transmitter as well as being extremely power inefficient due to the stringent linearity requirements of state-of-the-art phase/amplitude modulations. For example, recent studies have shown that, for a fixed RF output power, the total power consumption of

base stations linearly increases with the number of active RF chains.

These considerations imply that a major challenge of next-generation MIMO-enabled wireless networks is the design of multi-antenna transmission schemes with a limited number of active RF chains aiming at reducing circuitry complexity, inter-antenna synchronization requirements, inter-channel interference, signal processing complexity at the receiver, as well as at improving the energy efficiency. Fueled by these considerations, SM has recently established itself as an emerging and promising transmission concept belonging to the "massive" MIMO wireless systems family but exploiting the multiple antennas in a novel way compared with state-of-the-art high-complexity and power-hungry classic MIMOs. This tutorial is intended to offer a comprehensive state-of-the-art survey on SM-MIMO, the critical appraisal of its beneficial application domains and their research challenges, the analysis of the related technological issues associated with the implementation of SM-MIMO, and, finally, the description of the world's first experimental activities in this research field.

Spatial Modulation for MIMO Wireless Systems

Marco Di Renzo (French National Center for Scientific Research (CNRS), France); Ali Ghayeb (Texas A&M University at Qatar, Qatar); Harald Haas (The University of Edinburgh, United Kingdom)

MAC 01: Spectrum Sensing/Interference Co-existence

Energy-Efficient Transmission with Cooperative Spectrum Sensing in Cognitive Radio Networks

Yan Gao (Beijing University of Posts and Telecommunications, P.R. China); Wenjun Xu (Beijing University of Posts and Telecommunications, P.R. China); Kewen Yang (Beijing University of Posts and Telecommunications, P.R. China); Kai Niu (Beijing University of Posts and Telecommunications, P.R. China); Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)
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Wei Wang (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China); Yang Lan (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China); Atsushi Harada (DOCOMO Beijing Communications Laboratories Co., Ltd. & NTT DOCOMO, Inc., P.R. China)
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Xia Li (RWTH Aachen, Germany); Marina Petrova (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany)
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Xiaohui Li (Xidian University, P.R. China); Jianlong Cao (Xidian University, P.R. China); Qiong Ji (Xidian University, P.R. China); Yongqiang Hei (Xidian University, P.R. China)
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Leonardo Roveda Faganello (Federal University of Rio Grande do Sul, Brazil); Rafael Kunst (Federal University of Rio Grande do Sul (UFRGS) & Santa Cruz do Sul University (UNISC) and La Salle University (UNILASALLE), Brazil); Cristiano Bonato Both (Federal University of Rio Grande do Sul, Brazil); Lisandro Z Granville (Federal University of Rio Grande do Sul, Brazil); Juergen Rochol (University Federal do Rio Grande do Sul, Brazil)
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Performance Analysis of a Multi-PHY Coexistence Mechanism for IEEE 802.15.4g FSK Network

Chin-Sean Sum (National Institute of Information and Communications Technology, Japan);
Fumihide Kojima (National Institute of Information and Communications Technology, Japan);
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Tae-Hoon Kim (Seoul National University, Korea); Jin-Seok Han (Seoul national university, Korea);
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Peng-Yong Kong (Khalifa University of Science, Technology & Research (KUSTAR), UAE)
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Xu (Nanjing University, P.R. China); Xiaobing Wu (Nanjing University & State Key Lab of Novel
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Tony Ducrocq (INRIA Lille - Nord Europe, France); Nathalie Mitton (Inria Lille - Nord Europe,
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France)
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Cong Wang (State University of New York at Stony Brook, USA); Yuanyuan Yang (Stony Brook
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Mosarrat Jahan (University of Dhaka, Bangladesh); Lata Narayanan (Concordia University, Canada)
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Practical Scheduling for Stochastic Event Capture in Wireless Rechargeable Sensor Networks

Haipeng Dai (Nanjing University & State Key Lab of Novel Software Technology, P.R. China); Xiaobing Wu (Nanjing University & State Key Lab of Novel Software Technology, P.R. China); Lijie Xu (Nanjing University, P.R. China); Guihai Chen (Shanghai Jiao Tong University, P.R. China)
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Xinyu Yang (Xi'an Jiaotong University, P.R. China); Chaoxin Hu (Fuji Xerox Co., Ltd. & Xi'an Jiaotong University, P.R. China); Manli Fan (Xi'an Jiaotong University, P.R. China); Benyuan Liu (University of Massachusetts Lowell, USA)
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Changliang Xie (Shanghai Jiao Tong University, P.R. China); Kwang-Cheng Chen (National Taiwan University, Taiwan); Xinbing Wang (Shanghai Jiaotong University, P.R. China)
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Xianjun Deng (Huazhong University of Scienc and Technology & University of South China, P.R. China); Bang Wang (Huazhong University of Science and Technology, P.R. China); Nuoya Wang (Huazhong University of Science and Technology, P.R. China); Wenyu Liu (Huazhong University of Science and Technology, P.R. China); Yijun Mo (Huazhong University of Science and Technology, P.R. China)
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Wentao Zhao (Nanjing University, P.R. China); Shaowei Wang (Nanjing University, P.R. China)
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Timo Nihtilä (Magister Solutions Ltd., Finland); Vitaliy Tykhomyrov (Magister Solutions, Finland); Olli Alanen (Magister Solutions Ltd., Finland); Mikko A Uusitalo (Nokia Research Center, Finland); Antti Sorri (Nokia Research Center, Finland); Martti Moisio (Nokia Research Center, Finland);

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Yanzhi Tao (Nanjing University, P.R. China); Baoliu Ye (Nanjing University, P.R. China); Xiaoliang Wang (Nanjing University, P.R. China); Sanglu Lu (Nanjing University, P.R. China)
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Bin Fang (University of Science and Technology of China & Wireless Information Network laboratory, P.R. China); Sihai Zhang (University of Science and Technology of China, P.R. China); Wuyang Zhou (University of Science and Technology of China, P.R. China)
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Youjia Chen (Fujian Normal University, P.R. China); Zihuai Lin (University of Sydney, Australia); Branka Vucetic (The University of Sydney, Australia); Jianyong Cai (Fujian Normal University, P.R. China)
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Amanpreet Singh (University of Bremen, Germany); Andreas J. Könsgen (University of Bremen, Germany); Parwinder Singh (University of Bremen, Germany); Carmelita Goerg (University of Bremen, Germany)
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Mingming Li (Beijing University of Posts and Telecommunications, P.R. China); Xiaoxiang Wang (Beijing University of Posts and Telecommunications, P.R. China); Dongyu Wang (BUPT, P.R. China); Jia Zhou (Beijing University of Posts and Telecommunications, P.R. China)
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Marcio W. Emmanuel (PUC/Rio & Oi, Brazil); Guilherme D. G. Jaime (Federal University of Rio de Janeiro & National Nuclear Energy Commission, Brazil); José Roberto B. de Marca (PUC/Rio, Brazil)
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Yifeng Cai (Huazhong University of Science and Technology, P.R. China); Kunjie Xu (University of Pittsburgh, USA); Yijun Mo (Huazhong University of Science and Technology, P.R. China); Bang Wang (Huazhong University of Science and Technology, P.R. China); Mu Zhou (Chongqing University of Posts and Telecommunications & Chongqing Municipal Key Laboratory of Mobile Communications, P.R. China)
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Masahiro Kawada (Nara Institute of Science and Technology, Japan); Morihiko Tamai (Nara Institute of Science and Technology, Japan); Keiichi Yasumoto (Nara Institute of Science and Technology, Japan)
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Your WiFi Is Leaking: Inferring User Behaviour, Encryption Irrelevant

John Stewart Atkinson (University College London, United Kingdom); Oluwagbenga Adetoye (University College London, United Kingdom); Miguel Rio (UCL, United Kingdom); John Mitchell (University College London, United Kingdom)

NET 36: Poster Session I

End-to-End Availability Analysis of IMS-Based Networks: Simplex and Redundant System

Chayapol Kamyod (Aalborg University & Center for TeleInFrastruktur, Denmark); Rasmus Hjorth Nielsen (Cisco Systems, Denmark); Neeli Rashmi Prasad (Center for TeleInFrastructure (CTIF), Denmark); Ramjee Prasad (Aalborg University, Denmark)
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Shuang Qin (University of Electronic Science and Technology of China, P.R. China); Gang Feng (University of Electronic Science and Technology of China, P.R. China); Wenyi Qin (University of Electronic Science and Technology of China, P.R. China); Yu Ge (Institute for Infocomm Research, Singapore); Jaya Shankar Pathmasuntharam (Institute for Infocomm Research, Singapore)
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A Scalable and Secure VPLS Architecture for Provider Provisioned Networks

Madhusanka Liyanage (University of Oulu, Finland); Andrei Gurtov (University of Oulu & Helsinki Institute for Information Technology, Finland)
pp. 1115-1120

Attainable Throughput, Delay and Scalability for Geographic Routing on Smart Grid Neighbor Area Networks

Gowdemy Rajalingham (McGill University, Canada); Quang-Dung Ho (McGill University, Canada); Tho Le-Ngoc (McGill University, Canada)
pp. 1121-1126

Source Localization using Graph-based Optimization Technique

Seshan Srirangarajan (Cork Institute of Technology, Ireland); Dirk Pesch (Cork Institute of Technology, Ireland)
pp. 1127-1132

Panel 1: Mobile Broadband Communications R&D in China

Professor Xiaohu You

Bio: Xiaohu You is currently a Professor and the Director of National Mobile Communications Laboratory at Southeast University. His research interests include mobile communication systems, signal processing and its applications. From 1999 to 2002, he was the Principal Expert of the C3G Project, responsible for organizing China's 3G Mobile Communications R&D Activities. From 2001-2006, he was the Principal Expert of the national 863 beyond 3G FuTURE Project. He has contributed over 40 IEEE journal papers and 2 books in the areas of adaptive signal processing, neural networks and their applications to communication systems. Professor Xiaohu You is an IEEE Fellow, chair of IEEE Nanjing Section, and General Chair of WCNC'2013.

Panelists:

Dr. Chih-Lin I, Chief Scientist, China Mobile, China
Prof. Xiaohu You, Southeast University, China
Prof. Jing Wang, Tsinghua University, China
Dr. Yi Wang, China Academy of Telecommunication Research, China
Mr. Ganghua Yang, Huawei, China

Abstract:

In the past decade, the mobile communications industry in China has developed rapidly with strong growth in mobile subscribers. China has the largest number of mobile subscribers (over 950 million in October 2012) in the world. In 2012, mobile industry revenue in China is expected to be over US\$200 billion and accounts for about 75% of revenue of China's telecommunication sector as a whole. There is a huge demand for high data rate mobile services in China. On the other hand, the investment by China government and industry in the research and development for future mobile communication technologies has been increased significantly in recent years. For example, the five-year research budget in so-called "National Key Integrated Project in Future Broadband Mobile Communications" is over US\$10 billion.

This Panel will bring together five prestigious speakers who will present their views as to what challenges and technologies in R&D are and how they are to be solved.

- TD-LTE technologies and services (by Dr. Chih-Lin I, China Mobile)
- 5G mobile technologies (by Professor Xiaohu You, Southeast University)
- Distributed wireless communications (by Professor Jing Wang, Tsinghua University)

- Heterogeneous networks and small cells (by Dr. Yi Wang, CATR) Massive MIMO technologies (by Mr. Ganghua Yang, Huawei)

PHY 01: Network Coding I

Lattice-based Wyner-Ziv Coding for Parallel Gaussian Two-Way relay Channels

Sinda Smirani (CEA, France); Mohammed Kamoun (CEA-LIST, France); Mireille Sarkiss (CEA LIST, France); Abdellatif Zaidi (Université Paris-Est Marne La Vallée, France); Pierre Duhamel (Lss Supelec & CNRS, France)
pp. 2405-2409

Wireless Network-Coded Four-Way Relaying Using Latin Hyper-Cubes

Srishti Shukla (Indian Institute of Science, Bangalore, India); B. Sundar Rajan (Indian Institute of Science, India)
pp. 2410-2415

Two-Way Non-Coherent Physical-Layer Network Coded Differential Distributed Space-Time Block Coding

Kai Zhu (University of York, United Kingdom); Alister G. Burr (University of York, United Kingdom)
pp. 2416-2421

Multi-level Physical-Layer Network Coding for Gaussian Two-way Relay Channels

Zhiyong Chen (Shanghai Jiaotong University, P.R. China); Bin Xia (Shanghai Jiaotong University, P.R. China); Hui Liu (Shanghai JiaoTong University, P.R. China)
pp. 2422-2427

Hybrid AF and DF with Network Coding for Wireless Two Way Relay Networks

Yu Zhu (Fudan University, P.R. China); Xinhua Wu (Fudan University, P.R. China); Tianshi Zhu (Fudan University, P.R. China)
pp. 2428-2433

Asymptotic Behavior of Network Capacity under Spatial Network Coding

Farzan Farnia (Sharif University of Technology, Iran); S. Jamaloddin Golestani (Sharif University of Technology, Iran)
pp. 2434-2439

PHY 02: Communication Theory I - Secrecy

An Improved Achievable Secrecy Rate for the Relay-Eavesdropper Channel

Peng Xu (University of Science and Technology of China, P.R. China); Zhiguo Ding (Newcastle University, United Kingdom); Xuchu Dai (University of Science and Technology of China, P.R. China); Kin K. K. Leung (Imperial College, United Kingdom)
pp. 2440-2445

Using Ill-Conditioned Theory for Physical-Layer Security in Time-Variant Channels

Wenyu Luo (national digital switching system engineering & technological R&D center, P.R. China)
pp. 2446-2451

Achieving Secrecy Capacity of MISO Fading Wiretap Channels with Artificial Noise

Qi Xiong (Nanyang Technological University, Singapore); Yi Gong (Nanyang Technological University, Singapore); Ying-Chang Liang (Institute for Infocomm Research, Singapore)
pp. 2452-2456

Secrecy Capacity Over Log-normal Fading Channel with Diversity Combining Techniques

Md. Zahurul Islam Sarkar (The University of Edinburgh, United Kingdom); Tharmalingam Ratnarajah (The University of Edinburgh, United Kingdom)
pp. 2457-2461

On the Physical Layer Security in Large Scale Cellular Networks

He Wang (Australian National University & NICTA, Australia); Xiangyun Zhou (The Australian National University, Australia); Mark C Reed (UNSW Canberra, Australia)
pp. 2462-2467

Bits-to-Symbol Mappings for Superposition Coding Based HARQ Systems

Tumula V. K. Chaitanya (Linköping University, Sweden); Erik G. Larsson (Linköping University, Sweden)
pp. 2468-2472

PHY 03: Cognitive Radio I

Robust Beamforming for Relay-Aided Multiuser MIMO Cognitive Radio Networks

Tianxiang Luan (Tsinghua University & Institute of China Electronic System Engineering Company, P.R. China); Feifei Gao (Tsinghua University, P.R. China); Xian-Da Zhang (Tsinghua University, P.R. China); James C. F. Li (NEC Laboratories China, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
pp. 2473-2477

Network Utility Maximization of MIMO Cognitive Radio Network With Total Interference-Power Constraints

Yanqing Liu (Baylor University, USA); Liang Dong (Baylor University, USA)
pp. 2478-2483

A Novel Underlay TV Spectrum Sharing Scheme Based On Polarization Adaption for TD-LTE System

Dongming Li (Beijing University of Posts and Telecommunications, P.R. China); Caili Guo (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Xiaolin Lin (Beijing University of Posts and Telecommunications, P.R. China)
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Secondary Network Optimization for Overlaid Wireless Networks with MIMO Spatial Multiplexing

Xianling Wang (Beijing University of Posts and Telecommunications, P.R. China); Jianjun Liu (China Mobile Research Institute, P.R. China); Jian Geng (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)
pp. 2490-2495

Near-optimal Downlink Precoding of a MISO System for a Secondary Network Under the SINR Constraints of a Primary Network

Ki-Hong Park (King Abdullah University of Science and Technology, Saudi Arabia); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
pp. 2496-2500

Optimal Linear Pre-coders for Opportunistic Spectrum Sharing with Arbitrary Input Assumption

Rui Zhu (Tsinghua, P.R. China)
pp. 2501-2506

PHY 04: Receivers I

Impact of I/Q Imbalance on the Performance of Two-Way CSI-Assisted AF Relaying

Jian Qi (King Abdullah University of Science and Technology (KAUST), Saudi Arabia); Sonia Aïssa (INRS, University of Quebec, Canada); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
pp. 2507-2512

A Blind-ML Method for Frequency-Selective I/Q Mismatch Compensation in Low-IF Receivers

Aamir Ishaque (RWTH, Aachen University Germany, Germany); Gerd H. Ascheid (RWTH Aachen University, Germany)
pp. 2513-2518

Carrier Frequency Offset Estimation Approach for Multicarrier Transmission on Hexagonal Time-Frequency Lattice

Kui Xu (Institute of Communications Engineering, PLAUST, P.R. China); Wenfeng Ma (PLA University of Science and Technology, P.R. China); Lianguo Wu (PLA University of Science and

Technology, P.R. China); Wei Xie (PLA University of Science and Technology, P.R. China); Dongmei Zhang (PLA University of Science and Technology, P.R. China); Youyun Xu (Shanghai Jiaotong University, P.R. China)
pp. 2519-2524

Towards Practical Channel Reciprocity Exploitation: Relative Calibration in the Presence of Frequency Offset

Maxime Guillaud (Vienna University of Technology, Austria); Florian Kaltenberger (Eurecom, France)
pp. 2525-2530

Interactive Distributed Detection with Conditionally Independent Observations

Shengyu Zhu (Syracuse University, USA); Earnest Akofor (Syracuse University, USA); Biao Chen (Syracuse University, USA)
pp. 2531-2535

Exploiting Cyclic Prefix in Turbo FDE Systems Using Factor Graph

Jindan Yang (University of Western Australia, Australia); Qinghua Guo (University of Wollongong, Australia); Defeng Huang (University of Western Australia, Australia); Nordholm Sven (Curtin University of Technology, Australia)
pp. 2536-2541

PHY 05: Energy Efficiency I

Energy Cooperation in Cellular Networks with Renewable Powered Base Stations

Yeow-Khiang Chia (Institute for Infocomm Research & Agency for Science, Technology and Research, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore); Rui Zhang (National University of Singapore, Singapore)
pp. 2542-2547

Energy-efficient Uplink Training Design For Closed-loop MISO Systems

Xin Liu (Beihang University, P.R. China); Shengqian Han (Beihang University, P.R. China); Chenyang Yang (Beihang University, P.R. China); Chengjun Sun (Beijing Samsung Telecom R & D Center, P.R. China)
pp. 2548-2553

Energy-Efficient Downlink Transmission in Multi-Cell Coordinated Beamforming Systems

Xiaoming Wang (Southeast University, P.R. China); Pengcheng Zhu (National Mobile Communications Research Lab., P.R. China); Bin Sheng (Southeast University, P.R. China); Xiaohu You (National Mobile communication Research Lab., Southeast University, P.R. China)
pp. 2554-2558

On the Energy Efficiency of HARQ-IR Protocols for Wireless Network-Coded Butterfly Networks

Quoc-Tuan Vien (Nottingham Trent University, United Kingdom); Brian G Stewart (Glasgow Caledonian University, United Kingdom); Jinho Choi (Swansea University, United Kingdom); Huan X Nguyen (Middlesex University, United Kingdom)
pp. 2559-2564

Energy-Aware Power Allocation for Asymmetric Analog Network Coding with Statistical CSI

Chensi Zhang (Xidian University, P.R. China); Jianhua Ge (Xidian University, P.R. China); Jing Li (State Key Lab. of Integrated Service Networks, Xidian University, P.R. China); Yun Hu (Xidian University, P.R. China)
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Spectrum Efficiency and Energy Efficiency Tradeoff for Heterogeneous Wireless Networks

Gaoning He (Huawei Technologies, P.R. China); Shunqing Zhang (Huawei Technologies, Co. Ltd., P.R. China); Yan Chen (Huawei, P.R. China); Shugong Xu (Huawei, P.R. China)
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PHY 49: UWB and TOA Estimation I - (Poster Session I)

Short Range Ultra-Wideband Multiple Input Multiple Output Channel Measurements

Nikola Gvozdenovic (Vienna University of Technology, Austria); William Thompson (University of Bristol, United Kingdom); Mark Beach (University of Bristol, United Kingdom); Christoph F

Mecklenbräuker (Vienna University of Technology, Austria); Geoffrey Hilton (University of Bristol, United Kingdom)
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Bounds on Performance of UWB TOA Estimation using Finite Resolution Quantization

Fei Sun (University of Science and Technology of China, P.R. China); Huarui Yin (University of Science and Technology of China, P.R. China); Weidong Wang (University of Science and Technology of China, P.R. China)
pp. 2579-2584

Inter-Symbol Interference Cancellation in Monobit Transmitted-Reference Impulse Radio UWB Receivers

Hassan Khani (University of Northern Iowa & Ghochan Higher Educational Complex of Engineering and Technology, USA); Hong Nie (University of Northern Iowa, USA); Weidong Xiang (University of Michigan, Dearborn, USA); Zhizhang (David) Chen (Dalhousie University, Canada)
pp. 2585-2590

A Simple Pearson Distribution Based Detector with Applications to Time-Hopping Multiuser UWB Receiver Design

Jun Yang (National University of Defense Technology, P.R. China); Ning Wang (University of Victoria, Canada)
pp. 2591-2596

SA 01: Applications in Wireless Sensor and Mesh Networks I

Circle-based Approximation to Forest Fires with Distributed Wireless Sensor Networks

M. Angeles Serna (University of Castilla-La Mancha & Instituto de Investigación en Informática (I3A), Spain); Aurelio Bermudez (University of Castilla-La Mancha & Computing Systems Department, Spain); Rafael Casado (University of Castilla-La Mancha, Spain)
pp. 4329-4334

Collaborative Sequential Detection in Surveillance Sensor Networks

Tai-Lin Chin (National Taiwan University of Science and Technology, Taiwan); Kai-Lung Hua (National Taiwan University of Science and Technology, Taiwan); Tien-Ruey Hsiang (National Taiwan University of Science and Technology, Taiwan); Ge-Ming Chiu (National Taiwan University of Science and Technology, Taiwan); Shiow-yang Wu (National Dong Hwa University, Taiwan)
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Cooperative Multi-target Tracking in Passive Sensor-based Networks

Frank Jiang (UNSW, Australia); Jiankun Hu (University of New South Wales, Australia)
pp. 4340-4345

High Performance Energy Efficient Multi-Channel Wireless Data Broadcasting System

Jiaofei Zhong (University of Central Missouri, USA); Zheng Gao (UTD, USA); Weili Wu (UT Dallas, USA); Weidong Chen (South China Normal University, P.R. China); Xiaofeng Gao (Shanghai Jiao Tong University, P.R. China); Xiaodong Yue (University of Central Missouri, USA)
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Design of UHF RFID Broadband Anti-metal Tag Antenna Applied on Surface of Metallic Objects

Yejun He (Shenzhen University & College of Information Engineering, P.R. China); Zhengzhen Pan (Shenzhen University, P.R. China)
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A Lightweight Anomaly Detection Framework for Medical Wireless Sensor Networks

Osman Salem (University of Paris Descartes, France); Yaning Liu (JCP-Consult, France); Ahmed Mehaoua (University of Paris Descartes, France)
pp. 4358-4363

MAC 03: Cognitive Radio I

Efficient Data Transmission with Random Linear Coding in Multi-Channel Cognitive Radio Networks

Changliang Zheng (Beijing University of Posts and Telecommunications & Macquarie University, P.R. China); Eryk Dutkiewicz (Macquarie University, Australia); Ren Ping Liu (CSIRO, Australia);

Rein Vesilo (Macquarie University, Australia); Zheng Zhou (Beijing University of Posts and Telecommunications, P.R. China)
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A Non-cooperative Hierarchical Opportunistic Spectrum Access for Cognitive Radio Networks

Habachi Oussama (LIA, France)
pp. 83-88

Reciprocal Learning for Cognitive Medium Access

Xianfu Chen (VTT Technical Research Centre of Finland, Finland); Zhifeng Zhao (Zhejiang University, P.R. China); David Grace (University of York, United Kingdom); Honggang Zhang (Université Européenne de Bretagne (UEB) and Supelec & Zhejiang University, France)
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Providing Complete Rendezvous Guarantee for Cognitive Radio Networks by Quorum Systems and Latin Squares

Chih-Min Chao (National Taiwan Ocean University, Taiwan); Hsiang-Yuan Fu (National Taiwan Ocean University, Taiwan)
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Minimum Interference Topology Construction for Robust Multi-Hop Cognitive Radio Networks

Po-Kai Tseng (Academia Sinica, Taiwan); Wei-Ho Chung (Academia Sinica, Taiwan); Pi-Cheng Hsiu (Academia Sinica, Taiwan)
pp. 101-105

Centralized Compressed Sensing with Structurally Random Matrix in Cognitive WLAN over Fiber

Baokun Shan (Beijing University of Posts and Telecommunications, P.R. China); Hong Ji (Beijing University of Posts and Telecommunications, P.R. China); Yi Li (Beijing University of Posts and Telecommunications, P.R. China)
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MAC 04: Device-to-Device Communications

Resource Allocation Scheme for Device-to-Device Communication for Maximizing Spatial Reuse

Dong Heon Lee (Seoul National University, Korea); Kae Won Choi (Seoul National University of Science and Technology, Korea); Wha Sook Jeon (Seoul National University, Korea); Dong Geun Jeong (Hankuk University of Foreign Studies, Korea)
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Group-wise channel sensing and resource pre-allocation for LTE D2D on ISM band

Bin Zhou (Shanghai Research Center for Wireless Communications & Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, P.R. China); Saisai Ma (Hohai University, P.R. China); Jing Xu (Shanghai Institute of Microsystem and Information Technology, and SHRCWC, P.R. China); Zhenhong Li (Renesas Mobile Corporation, P.R. China)
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Enhanced Power Management for Wi-Fi Direct

Keun-Woo Lim (Ajou University, Korea); Woo-Sung Jung (Ajou University, Korea); Hanna Kim (Ajou University, Korea); Jina Han (Ajou University, Korea); Young-Bae Ko (Ajou University, Korea)
pp. 123-128

Resource Allocation Using Particle Swarm Optimization for D2D Communication Underlay of Cellular Networks

Lin Su (Tongji University, P.R. China); Yusheng Ji (National Institute of Informatics, Japan); Ping Wang (Tongji University, P.R. China); Fuqiang Liu (Tongji University, P.R. China)
pp. 129-133

Joint Scheduling and Resource Allocation for Device-to-Device Underlay Communication

Feiran Wang (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China); Zhu Han (University of Houston, USA); Qun Zhao (DoCoMo Beijing Labs, P.R. China); Xiaoli Wang (Docomo Beijing Communications Lab, P.R. China)
pp. 134-139

Interference-Aware Graph Based Resource Sharing for Device-to-Device Communications Underlying Cellular Networks

Rongqing Zhang (Peking University, P.R. China); Xiang Cheng (Peking University, P.R. China); Bingli Jiao (Peking University, P.R. China)
pp. 140-145

MAC 05: Energy Efficient Design

Energy Efficiency of Outage Constrained Two-Tier Heterogeneous Cellular Networks

Jaya B Rao (University of Calgary, Canada); Abraham O Fapojuwo (University of Calgary, Canada)
pp. 146-151

Cross-layer Design Based Sustainability and Energy-efficiency Optimization in Femtocell Networks with Sustainable Energy

Ying Xu (Beijing University of Posts and Telecommunications, P.R. China); Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China); Hongjia Li (Institute of Acoustics, Chinese Academy of Sciences & Beijing University of Posts and Telecommunications, P.R. China); Yuchi Zhang (Beijing University of Posts and Telecommunications, P.R. China); Ping Zhang (WTI-BUPT, P.R. China); Song Ci (University of Nebraska-Lincoln, USA)
pp. 152-156

GreenBase: An Energy-Efficient Middleware for Baseband Units

Jiayu Gong (Wayne State Univ, USA); Zhen Kong (Qualcomm, USA); Cheng-Zhong Xu (Wayne State University, USA); Kun Wang (Wayne State University, USA)
pp. 157-162

Joint Rate and Voltage Adaptation to Save Energy of Software Radios in Underutilized WLAN

Kyoung-Hak Jung (Pohang University of Science and Technology (POSTECH), Korea); Young-Joo Suh (Pohang University of Science and Technology (POSTECH), Korea); Chansu Yu (Cleveland State University, USA)
pp. 163-168

An Energy-Efficient User Scheduling Scheme for Multiuser MIMO Systems with RF Chain Sleeping

Xu Zhang (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China); Xiaokang Lin (Tsinghua University, P.R. China)
pp. 169-174

Picocell-Density Based Energy-Saving for QoS Provisioning in Heterogeneous Networks

Li Wang (Beijing University of Posts and Telecommunications, P.R. China); Xi Zhang (Texas A&M University, ECE Department, USA); Wen Zhu (BUPT, P.R. China); Mei Song (, P.R. China)
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NET 05: Wireless Sensor and Mesh Networks II

Group Data Collection in Wireless Sensor Networks with a Mobile Base Station

Xiucai Ye (University of Tsukuba, Japan); Jie Li (University of Tsukuba, Japan); Li Xu (Fujian Normal University, P.R. China)
pp. 1133-1138

A Data Gathering Algorithm Based on Energy-Balanced Connected Dominating Sets in Wireless Sensor Networks

Xiaoyan Kui (Central South University, P.R. China); Jianxin Wang (Central South University, P.R. China); Shigeng Zhang (Central South University, P.R. China)
pp. 1139-1144

The Use of A Mobile Sink for Quality Data Collection in Energy Harvesting Sensor Networks

Xiaojiang Ren (The Australian National University, Australia); Weifa Liang (The Australian National University, Australia)
pp. 1145-1150

An Integrating Data Gathering Scheme for Wireless Sensor Networks

Zhongcheng Wei (Beijing University of Posts and Telecommunications, P.R. China); Yongmei Sun (Beijing University of Posts and Telecommunications, P.R. China); Ji Yuefeng (Beijing University of Posts and Telecommunications, P.R. China)
pp. 1151-1156

An Opportunistic Routing for Real-time Data in Wireless Sensor Networks

Seungmin Oh (Chungnam National University, Korea); Yongbin Yim (Chungnam National University, Korea); Jeongcheol Lee (Chungnam National University, Korea); Hosung Park (Chungnam National University, Korea); Sang-Ha Kim (Chungnam National University, Korea)
pp. 1157-1162

Impacts of Random Forwarding on Network Performance of Wireless Sensor Networks

Shu Li (Kyung Hee University, Korea); Jeong Geun Kim (Kyung Hee University, Korea)
pp. 1163-1167

NET 06: Ad-Hoc and Sensor Networks II

Traffic Assignment Algorithm for Multi-path Routing in Cognitive Radio Ad Hoc Networks

Li Gui (Beijing University of Posts and Telecommunications, P.R. China); Xiaofeng Zhong (Tsinghua University, P.R. China); Shihong Zou (Beijing University of Posts&Telecommunication, P.R. China)
pp. 1168-1173

Distributed Routing and Channel Allocation in Multi-channel Multi-hop Ad Hoc Networks

Lei Jiao (University of Agder & Department of Information and Communication Technology, Norway); Ke Yu (Beijing University of Posts and Telecommunications, Beijing, P.R. China); Frank Y. Li (University of Agder, Norway)
pp. 1174-1179

Bias-based Self-Organized Cell Selections for Outdoor Open-Access Picocell Networks

Tan Wang (State Radio Monitoring Center, P.R. China); Biao Huang (State Radio Monitoring Center, P.R. China); Ying Wang (Beijing University of Posts and Telecommunications, P.R. China)
pp. 1180-1185

Connectivity of Two nodes in Cognitive Radio Ad Hoc Networks

Jianwei Liu (Beijing University of Posts and Telecommunications, P.R. China); Qixun Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yuchi Zhang (Beijing University of Posts and Telecommunications, P.R. China); Zhiqing Wei (Beijing University of Posts and Telecommunications, P.R. China); Sisi Ma (Beijing University Of Posts And Telecommunications, P.R. China)
pp. 1186-1191

QoS Optimization in Ad Hoc Wireless Networks through Adaptive Control of Marginal Utility

Jeffery P. Hansen (Carnegie Mellon University, USA); Scott Hissam (Carnegie Mellon, USA); Lutz Wrage (Software Engineering Institute, USA)
pp. 1192-1197

Topology Control using Selection Diversity in Ad Hoc Network

Kiryang Moon (University of Korea, Korea); Seong-Jun Oh (Korea University, Korea)
pp. 1198-1203

NET 07: Heterogeneous Networks II

Interference Management for Energy Saving in Heterogeneous Networks

Xun Sun (Nanjing University, Canada); Shaowei Wang (Nanjing University, P.R. China)
pp. 1204-1208

Equivalent Cost Ring Model for CAC in Heterogeneous Wireless Networks

Kai-yuan Jiang (Communication Research Center, Harbin Institute of Technology, P.R. China); Xuemai Gu (Harbin Institute of Technology, P.R. China); Qing Guo (Harbin Institute of Technology, P.R. China); Lei Ning (Communication Research Center, Harbin Institute of Technology, P.R. China); Liming Chen (Harbin Institute of Technology, P.R. China)
pp. 1209-1213

An Auction Mechanism for Cell/Transmission Mode Selection in Heterogeneous Multicast Networks

Yuyi Li (Shanghai Jiaotong University, P.R. China); Kai Ying (Shanghai Jiao Tong University, P.R. China); Lei Huang (SLC, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); HanWen Luo (Shanghai JiaoTong University, P.R. China)
pp. 1214-1219

Neighbour Cell List Management in Wireless Heterogeneous Networks

Rouzbeh Razavi (Bell labs, Alcatel-Lucent, Ireland); David López-Pérez (Bell Labs Alcatel-Lucent, Ireland); Holger Claussen (Bell Labs, Alcatel-Lucent, Ireland)
pp. 1220-1225

An Asymmetric Cell Selection Scheme for Inter-Cell Interference Coordination in Heterogeneous Networks

Xinsheng Zhao (Southeast University, P.R. China); Wang Chao (National Mobile Communications Research Laboratory, Southeast University, P.R. China)
pp. 1226-1230

Fuzzy Clustering based Group Vertical Handover Decision for Heterogeneous Wireless Networks

Lei Ning (Communication Research Center, Harbin Institute of Technology, P.R. China); Zhen-Yong Wang (Harbin Institute of Technology, P.R. China); Qing Guo (Harbin Institute of Technology, P.R. China); Kai-yuan Jiang (Communication Research Center, Harbin Institute of Technology, P.R. China)
pp. 1231-1236

NET 37: Poster Session II

A Temporal Validity Based Buffer Management Scheme in Content-Centric DTNs

Ying An (Central South University, P.R. China); Jiawei Huang (Central South University, P.R. China); Xi Luo (Hunan Police Academy, P.R. China); Yao Liu (Central South University & Hunan University of Commerce, P.R. China); Jianxin Wang (Central South University, P.R. China)
pp. 1237-1242

Economic analysis of cache location in mobile network

Xuejun Cai (Ericsson, P.R. China); Shunliang Zhang (Ericsson, P.R. China); Yunfei Zhang (R&D, China Mobile, P.R. China)
pp. 1243-1248

Performance Optimization of Multicast Content Delivery in a Mobile Environment based on PMIPv6

Tien-Thinh Nguyen (EURECOM, France); Christian Bonnet (EURECOM, France)
pp. 1249-1254

TOA Estimation in IR UWB Ranging Using Rank Statistics With Energy Detection Receiver Under Harsh Conditions

Hong Ding (National University of Defense Technology, P.R. China); Wen-yan Liu (National University of Defense Technology, P.R. China); Xiaotao Huang (National University of Defense Technology, P.R. China); Linhua Zheng (National University of Defense Technology, P.R. China)
pp. 1255-1260

Panel 2: C-RAN: Today and Tomorrow

Dr. Chih-Lin I

Bio: Dr. Chih-Lin I graduated from Stanford University and majored in Electrical Engineering. Her research focus has been on the leading techniques of wireless communication system. Now she is the Chief Scientist of Wireless Technologies, China Mobile Research Institute. She is leading research on new Wireless Internet and Green Communication Technologies. Dr. I joined China Mobile Research Institute as a recipient of CCCP "National Thousand Talent Program". She has established the Green Communications Research Center of China Mobile, currently spearheading major initiatives including high energy efficiency system architecture, technologies, and devices; advanced R&D for 5G; green energy, power and carbon reduction.

Panelists:

- Dr. Nathan J. Gomes, University of Kent, England
- Dr. Yi Wang, Huawei Technologies Co., Ltd. China
- Mr. Sunny Zhang, Intel Labs China.
- Assaf Touboul, Vice President of Technology, Qualcomm, USA
- Mr. Liang Xiong, Alcatel-Lucent, China

Abstract:

In the past few years, C-RAN has been generating increasing heated interest from both industry and academia. Featuring Centralized processing, Cooperative radio, Cloud computing and Clean RAN system, C-RAN claims such advantages as fast network deployment, reduction of TCO cost and improved network performance and efficiency. While the success has been quite phenomenal up to date, the new paradigm still faces a plethora of challenges to be solved before it can be deployed in large scale, which requires exploiting the synergy from industry and academia.

With the contribution of key luminaries, the specific C-RAN panel aims to provide a unique platform to share the latest progress, to exchange their viewpoints on technology innovation, future application and so forth in the C-RAN paradigm.

- Flexible, scalable and reliable large-scale BBU pool design
- Efficient fronthaul solutions
- Integration of virtualization with C-RAN
- Cloud computing technology in C-RAN
- Large-scale cooperative communication

PHY 06: Channel Modeling and Characterization

Spatial-Temporal Wireless Network Channels

Yifan Chen (South University of Science and Technology of China, P.R. China); Lorenzo Mucchi (University of Florence, Italy); Rui Wang (The South University of Science and Technology of China, Hong Kong)
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Channel Capacity of Magnetic Induction Based Wireless Underground Sensor Networks under Practical Constraints

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Djamel Djenouri (Centre de Recherche sur l'Information Scientifique et Technique (CERIST), Algiers, Algeria); Nassima Merabtine (Saad Dahlab University, Algeria); Fatma Zohra Mekahlia (Saad Dahlab University, Algeria); Messaoud Doudou (Centre de Recherche sur l'Information Scientifique et Technique (CERIST), Algeria)
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Shengyu Li (Beijing University of Posts and Telecommunications, P.R. China); Wenjun Xu (Beijing University of Posts and Telecommunications, P.R. China); Kewen Yang (Beijing University of Posts and Telecommunications, P.R. China); Kai Niu (Beijing University of Posts and Telecommunications, P.R. China); Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)
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Jinyi Zhou (Tsinghua University, P.R. China); Shutao Xia (Tsinghua University, P.R. China); Yong Jiang (Graduate School at Shenzhen, Tsinghua University, P.R. China); Haitao Zheng (Tsinghua University, P.R. China)
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Joint Rate and Power allocation for Cooperative Layered Video Multicast Systems

Yan Mei (University of Science and Technology of China, P.R. China); Ling Qiu (PCN&SS Lab, P.R. China)
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Shuanglu Zhang (Beijing University of Posts and Telecommunications, P.R. China); Wenjun Xu (Beijing University of Posts and Telecommunications, P.R. China); Shengyu Li (Beijing University of Posts and Telecommunications, P.R. China); Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)
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Joint Power and Location Optimization for Analog Network Coding with Multi-Antenna Sources

Prabhat Kumar Upadhyay (Indian Institute of Technology Indore, India); Shankar Prakriya (Indian Institute of Technology, Delhi, India)
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A Distributed Multiple Description Coding Multicast Resource Allocation Scheme in OFDM-based Cognitive Radio Networks

Kewen Yang (Beijing University of Posts and Telecommunications, P.R. China); Wenjun Xu (Beijing University of Posts and Telecommunications, P.R. China); Shengyu Li (Beijing University of Posts and Telecommunications, P.R. China); Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)
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Xin Wang (Fudan University, P.R. China)
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Huasen Wu (Beihang University, Beijing, P.R. China); Youguang Zhang (Beihang University, P.R. China); Xin Liu (UC Davis, USA)
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Tilak Rajesh Lakshmana (Chalmers University of Technology, Sweden); Jingya Li (Chalmers University of Technology, Sweden); Carmen Botella (University of Valencia, Spain); Agisilaos Papadogiannis (Chalmers University of Technology, Sweden); Tommy Svensson (Chalmers University of Technology, Sweden)
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Stephen Nsoh (University of Lethbridge, USA); Robert Benkoczi (University of Lethbridge, Canada)
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I-Fen Chao (Yuan Ze University, Taiwan); Chuei-Sheng Chiou (Department of Electrical Engineering, Yuan Ze University, Taiwan)
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Santanu Mondal (Indian Institute of Science, India); Vinod Sharma (Indian Institute of Science, India)
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Jianwei Niu (Beihang University, P.R. China); Long Cheng (Singapore University of Technology and Design & Beihang University, Singapore); Yu Gu (Singapore University of Technology and Design & Advanced Digital Sciences Center, Singapore); Junghyun Jun (Singapore University of Technology and Design & Singapore-MIT International Design Centre (IDC), USA); Qingquan Zhang (University of Minnesota, USA)
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Energy Efficiency in the Phantom Cell enhanced Local Area architecture

Sayandev Mukherjee (DOCOMO Innovations Inc., USA); Hiroyuki Ishii (DOCOMO Innovations, Inc, Japan)
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Andres Kwasinski (Rochester Institute of Technology, USA); Alexis Kwasinski (The University of Texas at Austin, USA)
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Md. Farhad Hossain (The University of Sydney, Australia); Kumudu S Munasinghe (University of Canberra, Australia); Abbas Jamalipour (University of Sydney, Australia)
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Dongheon Lee (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China)
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Shengyang Chen (Dublin City University & Everseen Ltd., Ireland); Zhenhui Yuan (Dublin City University, Ireland); Gabriel-Miro Muntean (Dublin City University, Ireland)
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Admission Control in Wireless Mesh Networks based on Game Theory

Rong He (Southwest Jiaotong University, P.R. China); Xuming Fang (Southwest Jiaotong University, P.R. China)
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Impact of Interface Constraint on Channel Assignment in Wireless Mesh Networks

Ying-Yu Chen (National Chiao Tung University, Taiwan); Chien Chen (National Chiao Tung University, Taiwan); Rong-Hong Jan (National Chiao Tung University, Taiwan)
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On the Optimal Lifetime of Cooperative Routing for Multi-hop Wireless Sensor Networks

Jin Woo Jung (Georgia Institute of Technology, USA); Mary Ann Ingram (Georgia Institute of Technology, USA)
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Compressed Topology Tomography in Sensor Networks

Yao Liang (Indiana University Purdue University Indianapolis, USA); Rui Liu (IUPUI, USA)
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BREW: A Bandwidth Reservation Protocol for Multirate Anypath Routing in Wireless Mesh Networks

Xun Gao (Shanghai Jiao Tong University, P.R. China); Fan Wu (Shanghai Jiao Tong University, P.R. China); Xiaofeng Gao (Shanghai Jiao Tong University, P.R. China); Guihai Chen (Shanghai Jiao Tong University, P.R. China)
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NET 10: Scheduling

Downlink Packets Scheduling in Enterprise WLAN

Dong Zhao (National University of Defense Technology, P.R. China); Ming Zhu (National University of Defense Technology, P.R. China); Ming Xu (National University of Defense Technology, P.R. China); Jiannong Cao (Hong Kong Polytechnic Univ, Hong Kong)
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Cross-layer Scheduling with Secrecy Demands in Delay-aware OFDMA Network

Xingzheng Zhu (Shanghai Jiao Tong University, P.R. China); Bo Yang (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)
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Optimization of Delay Performance in Multicast CPC Scheduling

Ling Liu (ICT/CAS, P.R. China); Haihua Chen (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Hang Liu (Chinese Academy of Science, P.R. China); Lin Tian (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
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Adaptive User Scheduling and Resource Management for Multiuser MIMO Downlink Systems with Heterogeneous Delay Requirements

Junchao Li (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Nan Bao (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Weiwei Xia (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Lianfeng Shen (National Mobile Communications Research Laboratory, Southeast University, P.R. China)
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Adaptive Bit Rate Capable Video Caching and Scheduling

Hasti Ahlehagh (University of California San Diego, USA); Sujit Dey (University of California, San Diego, USA)
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QoS Provisioning Performance of Differentiated Queueing Service with Mobile Wireless Multimedia

Mian Guo (Guangdong University of Petrochemical Technology, P.R. China); Shengming Jiang (Shanghai Maritime University, P.R. China); Quansheng Guan (South China University of Technology & Chinese University of Hong Kong, P.R. China)
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Network Coding Assisted Cooperative Relay Scheme for Sender-oriented Broadcast in VANETs

Celimuge Wu (University of Electro-Communications, Japan); Satoshi Ohzahata (The University of Electro-Communications & Graduate School of Information Systems, Japan); Toshihiko Kato (University of Electro-Communications, Japan)
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Cache Content Placement Using Triangular Network Coding

Pouya Ostovari (Temple University & Computer and Information Sciences, USA); Abdallah A Khreishah (New Jersey Institute of Technology, USA); Jie Wu (Temple University, USA)
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Delay Optimization in Multi-hop Wireless Networks with Network Coding

Mohammadhossein Alvandi (Concordia University, Canada); Mustafa Mehmet-Ali (Concordia University, Canada); Jeremiah Hayes (Concordia University, Canada)
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A Spectrum-Efficient Broadcast Scheme Based on Network Coding in Cellular MIMO Systems

Zhongyuan Zhao (Beijing University of Posts and Telecommunications, P.R. China); Zhiguo Ding (Newcastle University, United Kingdom); Bin Han (Beijing University of Post and Telecommunication, P.R. China); Xinqian Xie (Beijing University of Posts and Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China); Mugen Peng (Beijing University of posts & Telecommunications, P.R. China)
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Network Coding Based Reliable Broadcast Protocol in Multi-Channel Multi-Radio Wireless Mesh Networks

Xiaobin Tan (University of Science and Technology of China, P.R. China); Hong Wen (University of Science and Technology of China, P.R. China); Kangqi Wang (University of Science and Technology of China, P.R. China)
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Distributed Precoder Design for Inter-cell Interference Suppressing in Multi-cell MU-MIMO Systems

Desheng Wang (Huazhong University of Science and Technology, P.R. China); Yifan Yang (Huazhong University of Science and Technology, P.R. China); Guangxi Zhu (& Information Engineering, Huazhong University of Science and Technology, P.R. China); Xiaojiang Du (Temple University, USA)
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NET 12: Wireless Networks I

Point to Multipoint Transport in Multichannel Wireless Environments

Hicham Khalife (Thales Communications & Security, France); Vania Conan (Thales Communications & Security, France); Jeremie Leguay (Thales Communications & Security, France); Thrasyvoulos Spyropoulos (EURECOM, France)
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Spatial Frequency Reuse in a Novel Generation of PMR Networks

Joanna Tomasik (Supélec, France); Alexis Lamiable (Supélec, France)
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Evaluation of Autonomic Load Balancing in Wireless Multiaccess Environment

Teemu Rautio (VTT Technical Research Centre of Finland, Finland); Markus Luoto (VTT Technical Research Centre of Finland, Finland); Jukka Mäkelä (VTT Technical Research Centre of Finland, Finland); Petteri Mannersalo (VTT Technical Research Centre of Finland, Finland)
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Design and Analysis of TCP AIMD in Wireless Networks

Chengdi Lai (University of Hong Kong, Hong Kong); Ka-Cheong Leung (The University of Hong Kong, Hong Kong); Victor O. K. Li (University of Hong Kong, P.R. China)
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A Novel Cross Layer TCP Pacing Protocol for Multi-hop Wireless Network

Hengheng Xie (Paradise Research Lab, Canada); Azzedine Boukerche (University of Ottawa, Canada); Mohammed Almulla (Kuwait University, Kuwait)
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An Efficient Interference Management Framework for Multi-hop Wireless Networks

Lei Shi (Hefei University of Technology, P.R. China); Yi Shi (Intelligent Automation Inc. & Virginia Tech, USA); Yuxiang Ye (Hefei University of Technology, P.R. China); Zhenchun Wei (Hefei University of Technology, USA); Jianghong Han (Hefei University of Technology, P.R. China)
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NET 38: Poster Session III

Distributed Algorithm for Ergodic Global Network Utility Maximization Based-on Joint RRA and VHD

Bin Fang (University of Science and Technology of China & Wireless Information Network laboratory, P.R. China); Wenzhong Zhang (China Ship Scientific Research Center, P.R. China); Sihai Zhang (University of Science and Technology of China, P.R. China); Wuyang Zhou (University of Science and Technology of China, P.R. China)
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Deployment of High Altitude Platforms in Heterogeneous Wireless Sensor Network via MRF-MAP and Potential Games

Xuyu Wang (Xidian University, P.R. China)
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Congestion Control for M2M Traffic with Heterogeneous Throughput Demands

Ray K. Lam (Intel-NTU Connected Context Computing Center, Taiwan); Kwang-Cheng Chen (National Taiwan University, Taiwan)
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Markov Random Fields Based Probabilistic Relaying for Multihop Networks

Aruna Jayasuriya (Central Queensland University, Australia); Sylvie Perreau (University of South Australia, Australia); Marc Sigelle (Telecom ParisTech and CNRS LTCI, France)
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Runtime Relocation of CDN Serving Points - Enabler for Low Costs Mobile Content Delivery

Marco Liebsch (NEC Europe Ltd, Germany); Faqir Zarrar Yousaf (NEC Laboratories, Europe, Germany)
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Panel 3: Small Cell and HetNet

Dr. Hidetoshi KAYAMA

Bio: Hidetoshi Kayama received the B.E., M.E. and Ph.D. degrees from Kyoto University in 1987, 1989 and 2004, respectively. He has been with NTT Radio Systems Laboratories since 1989, working on research of packet radio access protocols for cellular and wireless LAN. Since 1998, he was with NTT DoCoMo, Inc., where he engaged in the development of the PHS 64kbps data communication and research for QoS and MAC protocol for 4G mobile communications. Since 2004, he was a director of Lab in DOCOMO Beijing Labs. From 2010 to 2012, he was a leader of a research project of cognitive radio organized by MIA, Japan. Now he is the President and CEO of DOCOMO Beijing Communications Laboratories Co., Ltd., in China. He received the Scholarship Encouragement Award in 1995 from IEICE, and Best Paper Award of ICT2002, APCC2008 and 2012, ICCTA2009 respectively.

Panelists:

Dr. Peter Butovitsch, Director of wireless and system tech. Ericsson China, China
Mr. Takehiro NAKAMURA, Director of the Radio Access Network Department of NTT DoCoMo, Japan
Dr. Lei Wan, Senior Standard Expert, Huawei, China
Dr. Ning Zou, Senior manager of technical policy and standards dept. Intel China, China
Ms. Lixiang Xu, Principle Engineer, Samsung China, China

Abstract:

The provision of smartphones and tablets caused paradigm shift on user experiences. Simultaneously, it is driving the drastic growth of mobile data traffic. It is predicted that there will be 500 times amount of mobile traffic by the year of 2020. Facing the challenge of big gap between increasing traffic growth and saturation of user's charge (operator revenue), WiFi offloading is widely used by operators now. Recently, 3GPP starts the discussion of Release12, and small cell and heterogeneous network are expected as a potential solution to achieve both capacity increase and cost reduction. In this industry panel, we invited experts from operators, NW and terminal vendors to discuss the current status and necessary technologies towards WiFi enhancement, future small cell and heterogeneous networks.

- Necessity and development scenario of small cell/hetnet (Ericsson China, Dr. Peter Butovitsch, Director of wireless and system tech.)
- 3GPP standardization trend of small cell/hetnet (DOCOMO, Takehiro NAKAMURA, Director of the Radio Access Network Development Department of NTT DOCOMO, 3GPP RAN Chairman)
- Key technologies on small cell/hetnet (Huawei, Dr. Lei WAN, Senior Standard Expert, 3GPP RAN Prime)
- Enhancement of WiFi in IEEE (Intel, Dr. Ning Zou, Senior manager of technical policy and standards dept.)
- Trend and status of LTE/WiFi interworking (Samsung, Ms. Lixiang Xu, Principle Engineer, lead of 3GPP higher layer standardization team)

PHY 10: Coding and Modulation

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Haiyang Hu (Tsinghua University & State Key Lab on Digital Communication and Microwave, P.R. China)
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Jianrong Bao (Hangzhou Dianzi University, P.R. China); Minjian Zhao (Zhejiang University, P.R. China); Jie Zhong (Zhejiang University, P.R. China); Yunlong Cai (Zhejiang University, P.R. China)
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Mahyar Shirvanimoghaddam (University of Sydney, Australia); Yonghui Li (University of Sydney, Australia); Branka Vucetic (The University of Sydney, Australia)
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Hua Sun (University of Southampton, United Kingdom); Yiru Shen (University of Southampton, United Kingdom); Soon Xin (Michael) Ng (University of Southampton, United Kingdom); Lajos Hanzo (University of Southampton, United Kingdom)
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Lajos Hanzo (University of Southampton, United Kingdom); Robert G Maunder (University of Southampton, United Kingdom); Wenbo Zhang (UOS, United Kingdom)
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Performance Limits for Cognitive Small Cells

Matthias Wildemeersch (University of Twente & Institute for Infocomm Research (I2R), The Netherlands); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Alberto Rabbachin (Massachusetts Institute of Technology, USA); Cornelis H Slump (University of Twente, The Netherlands); Aiping Huang (Zhejiang University, P.R. China)
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Long Zhao (Beijing University of Posts and Telecommunications, P.R. China); Hui Zhao (Beijing University of Posts and Telecommunications, P.R. China); Kan Zheng (Beijing University of Posts&Telecommunications, P.R. China); Xingyu Xia (Beijing University of Posts & Telecommunications, P.R. China); Chengcheng Zhang (Beijing University of Posts and Telecommunication, P.R. China)
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Energy-Efficient Channel Aggregation in Cognitive Radio Networks with Imperfect Sensing

Lei Li (University of Science and Technology of China, P.R. China); Wenzhong Zhang (China Ship Scientific Research Center, P.R. China); Sihai Zhang (University of Science and Technology of China, P.R. China); Zhao Ming (University of Science and Technology of China, P.R. China); Wuyang Zhou (University of Science and Technology of China, P.R. China)
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The analysis of the Energy Efficiency for the Decode-and-Forward Two-Way Relay Networks

Huan Yu (Tsinghua University, P.R. China); Yunzhou Li (Tsinghua University, P.R. China); Xiaofeng Zhong (Tsinghua University, P.R. China); Lixuan Wang (State Key Laboratory of Wireless Mobile Communications (CATT), P.R. China); Jing Wang (EE, Tsinghua University, P.R. China)
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Qi Sun (Beijing University of Posts and Telecommunications, P.R. China); Lihua Li (Beijing University of Posts and Telecommunications, P.R. China); Markku Juntti (University of Oulu, Finland)
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Energy-Efficient Joint Beamforming and Antenna Selection for Multicast Systems

Bo Du (Southeast University, P.R. China); Wence Zhang (Southeast University, P.R. China); Cunhua Pan (Southeast University, P.R. China); Ming Chen (Southeast University, P.R. China)
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José Carlos Marinello (State University of Londrina, Brazil); Taufik Abrão (State University of Londrina, Brazil)
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Jeongho Yeo (Purdue University, USA); Joon Ho Cho (Pohang University of Science and Technology (POSTECH), Korea)
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Mei Leng (Nanyang Technological University, Singapore); Wee Peng Tay (Nanyang Technological University, Singapore); Chong Meng Samson See (TL@NTU, Singapore); Sirajudeen Gulam Razul (Nanyang Technological University, Singapore)
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Low Complexity Detection and Precoding for Massive MIMO Systems

Jun Won Choi (Qualcomm, USA); Byungju Lee (Korea University, Korea); Byonghyo Shim (Korea University, Korea); Insung Kang (Qualcomm Inc., USA)
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The Modified Cramer-Rao Bound for Channel Estimation in Quantize-and-Forward Cooperative Systems

Iancu Avram (UGent, Belgium); Marc Moeneclaey (Ghent University, Belgium)
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A Novel Modification of WSF for DOA Estimation

Haihua Chen (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Lin Tian (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jinlong Hu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Masakiyo Suzuki (Graduate School of Engineering, Kitami Institute of Technology, Japan)
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PHY 13: Compressive Sensing

Generalized Subspace Pursuit for Signal Recovery from Multiple-Measurement Vectors

Joe-Mei Feng (Academia Sinica, Taiwan); Chia-Han Lee (Academia Sinica, Taiwan)
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Frequency Domain Compressive Sensing of Multicarrier-Based QAPM System

So-Ra Kim (Chungbuk National University, Korea); Heung-Gyoon Ryu (Chungbuk National University, Korea)
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Performance Bounds of Compressed Sensing Recovery Algorithms for Sparse Noisy Signals

Xiangling Li (Beijing University of Post and Telecommunications, P.R. China); Qimei Cui (Beijing University of Posts and Telecommunications, P.R. China); Xiaofeng Tao (Beijing University of Posts and Telecommunications, P.R. China); Xianjun Yang (Beijing University of Post and Telecommunication, P.R. China); Waheed Ur Rehman (Beijing University of Posts and Telecommunications, P.R. China)
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Compressive Sensing-based Channel Estimation for Massive Multiuser MIMO Systems

Sinh Nguyen (Concordia University, Canada); Ali Ghrayeb (Texas A&M University at Qatar, Qatar)
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Joint SNR and Channel Estimation for 60 GHz Systems using Compressed Sensing

Bo Gao (Tsinghua University, P.R. China); Zhenyu Xiao (Tsinghua University, P.R. China); Changming Zhang (Tsinghua University, P.R. China); Depeng Jin (Tsinghua University, P.R. China); Lieguang Zeng (Tsinghua University, P.R. China)
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Collaborative Compressive Spectrum Sensing Using Kronecker Sparsifying Basis

Ahmed Mohamed Elzanati (Sinai University, Egypt); Mohamed F. Abdelkader (Port Said University, Egypt); Karim G Seddik (American University in Cairo & Alexandria University, Egypt); Atef Ghuniem (Suez Canal University, Egypt)
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PHY 51: Channel Estimation I - (Poster Session III)

A High-Resolution Wideband Digital Channelizer for Software Radio Systems Using High-Order Perfect Reconstruction Filterbanks

Bo Li (Tsinghua University, P.R. China); Jian Yan (Tsinghua University, P.R. China); Xiang Chen (Tsinghua University, P.R. China); Shunliang Mei (Tsinghua University, P.R. China)
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Wideband MIMO Channel Capacity Analysis based on Indoor Channel Measurement

Junjun Gao (Beijing University of Posts and Telecommunications, P.R. China); Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xiaofeng Tao (Beijing University of Posts and Telecommunications, P.R. China)
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Comparisons of Channel Estimation for OFDM-based and Wavelet-based Underwater Acoustic Communications

Chenhao Qi (Southeast University, P.R. China); Lenan Wu (Southeast University, P.R. China)
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H-inf channel estimation for MIMO-OFDM systems in the presence of carrier frequency offset

Peng Xu (Broadband and Wireless Communications Research Group, University of Kent, P.R. China); Jinkuan Wang (P.O.Box120 Northeastern Qinhuangdao City Hebei Province P.R. China, P.R. China); Yinghua Han (Northeastern University at Qinhuangdao, P.R. China); Feng Qi (Advanced Science Institute, RIKEN, Japan)
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Measurement Based Channel Modeling with Directional Antennas for High-Speed Railways

Ruisi He (Beijing Jiaotong University, P.R. China); Andreas Molisch (University of Southern California, USA); Zhangdui Zhong (Beijing Jiaotong University, P.R. China); Ai Bo (Beijing Jiaotong University, P.R. China); Jian-wen Ding (Beijing Jiaotong University, P.R. China); Ruifeng Chen (Beijing Jiaotong University, P.R. China); Zheda Li (University of Southern California, USA)
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SA 04: Applications in Mobile Communication and Network Technologies II

Preference-aware Object Retrieval in Opportunistic Mobile Social Networks

Hsiang-Hung Liu (Nation Taiwan University, Taiwan); Cheng-Fu Chou (NTU, Taiwan); Ing-Chau Chang (National Changhua University of Education, Taiwan)
pp. 4434-4438

A Survey of Trunking Communications over LTE: Implementation Framework, Application Requirements, and Quality of Service

Hongtao Yu (Harbin Institute of Technology, P.R. China); Siyue Sun (Harbin Institute of Technology, P.R. China); Qiyue Yu (Harbin Institute of Technology, P.R. China); Chenguang He (Harbin Institute of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China); Xue-Zhi Tan (Harbin Institute of Technology, P.R. China); Zhongzhao Zhang (Harbin Institute of Technology, P.R. China)
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Identifying High Dissemination Capability Nodes in Opportunistic Social Networks

Qingsong Cai (Beijing Technology and Business University & Beihang University, P.R. China);
Jianwei Niu (Beihang University, P.R. China); Guangzhi Qu (Oakland University, USA)
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Mobile Computing - A Green Computing Resource

He Ba (University of Rochester, USA); Wendi Heinzelman (University of Rochester, USA); Charles-Antoine Janssen (HealthyBill, Belgium); Jiye Shi (UCB Pharma, USA)
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Security-Assisted Rescue Service Architecture in Mobile Cloud Computing

Yu-Jia Chen (National Chiao Tung University, Taiwan); Chia-Yu Lin (National Chiao Tung University, Taiwan); Li-Chun Wang (National Chiao Tung University, Taiwan)
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Performance Monitoring Framework for Wi-Fi MANET

Boaz Benmoshe (Ariel University Center, Israel); Eyal Berliner (Ariel University Center, Israel); Amit Dvir (K&CG Lab Department of Computer Science Ariel University Center, Ariel, Israel)
pp. 4463-4468

Panel 4: Wireless Futures

Professor Lajos Hanzo

Bio: Lajos Hanzo (<http://wwwmobile.ecs.soton.ac.uk>) FEng, FIEEE, FIET, Fellow of EURASIP, DSc received his degree in electronics in 1976 and his doctorate in 1983. In 2009 he was awarded the honorary doctorate "Doctor Honoris Causa" by the Technical University of Budapest. During his 35-year career in telecommunications he has held various research and academic posts in Hungary, Germany and the UK. Since 1986 he has been with the School of Electronics and Computer Science, University of Southampton, UK, where he holds the chair in telecommunications. He has successfully supervised 80 PhD students, co-authored 20 John Wiley/IEEE Press books on mobile radio communications totalling in excess of 10 000 pages, published 1300 research entries at IEEE Xplore, acted both as TPC and General Chair of IEEE conferences, presented keynote lectures and has been awarded a number of distinctions. Currently he is directing a 100-strong academic research team, working on a range of research projects in the field of wireless multimedia communications sponsored by industry, the Engineering and Physical Sciences Research Council (EPSRC) UK, the Euro-pean IST Programme and the Mobile Virtual Centre of Excellence (VCE), UK. He is an enthusiastic supporter of industrial and academic liaison and he offers a range of industrial courses. He is also a Governor of the IEEE VTS. During 2008 - 2012 he was the Editor-in-Chief of the IEEE Press and a Chaired Professor also at Tsinghua University, Beijing. His research is also funded by the European Research Council's Senior Research Fellow Grant. For further information on research in progress and associated publications please refer to <http://wwwmobile.ecs.soton.ac.uk>

Panelists:

Prof. Fumiyuki Adachi, Tohoku University, Japan
Dr. Chih-Lin I, Chief Scientist, China Mobile, China
Prof. Victor O.K. Li, The University of Hong Kong, China
Dr. Wen Tong, Wireless CTO, Huawei, China
Prof. P. R. Kumar, Texas A&M University, USA

Abstract:

In recent years the rapidly growing smart-phone and tablet-computer population resulted in substantial tele-traffic growth. It is anticipated that this trend will continue throughout this decade until 2020, since wireless data-communications has become the fabric of wealth-creation. Its fiscal value is estimated by economists on the basis of predicting, how much the economy as a whole would stand to lose in the absence of mobile communications. Given the current level of growth, the data-traffic carried by the mobile network in 2020 might be 1000 times higher than that in 2010. As a further challenge, the bandwidth-efficiency can only be improved at the cost of reduced power-efficiency and vice versa.

Casting our eyes back by three decades, since the conception of the second-generation Pan-European GSM system known as the Global System of Mobile Communications in excess of three orders of magnitude bit rate improvements were achieved. This impressive development corresponds to more than an order of magnitude throughput improvement for each of the past three decades, because GSM had a data rate of 9.6 Kbps, while the High-Speed Packet Access (HSPA) system is capable of communicating at 13.7 Mbps. Without the dramatic advances in both signal processing and the achievable signal processing speed this dramatic performance improvement would have been impossible to achieve. It is important to note however that if the energy required for the transmission of a single bit is assumed to be fixed, then the above-mentioned throughput improvement would require a 1000-fold transmit power increase, which is clearly unrealistic.

Thanks to the advances of science and technology, fortunately the bit-energy required for high integrity communications has been substantially reduced, but clearly not by a factor of 1000. In other words, the possible transmit power reductions remained more limited, even when using the most advanced multi-stage iterative receivers - the required received signal power has not been reduced by as much as a factor of 1000 or 30 dB. This plausible observation motivates the further research of advanced wireless access.

MAC 08: Machine-Type Communications

A Scalable Hybrid MAC Protocol for Massive M2M Networks

Yi Liu (Singapore University of Technology and Design, Singapore); Chau Yuen (Singapore University of Technology and Design, Singapore); Jiming Chen (Zhejiang University, P.R. China); Xianghui Cao (Illinois Institute of Technology & Zhejiang University, USA)
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Dynamic Resource Allocation for Machine-Type Communications in LTE/LTE-A with Contention-Based Access

Kaijie Zhou (Eurecom, France); Navid Nikaein (Eurecom, France); Raymond Knopp (Institut Eurecom, France)
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Packet Aggregation for Machine Type Communications in LTE with Random Access Channel

Kaijie Zhou (Eurecom, France); Navid Nikaein (Eurecom, France)
pp. 262-267

Improving reliability and efficiency of communications in WSNs under high traffic demand

Daniel Alonso-Román (Universidad de Valencia, Spain); Eugenio Celada-Funes (Universidad de Valencia, Spain); César Asensio-Marco (Universidad de Valencia, Spain); Baltasar Beferull-Lozano (Universidad de Valencia, Spain)
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Efficient Multi-Receiver Message Aggregation for Short Message Delivery in M2M Networks

Lei Zheng (UVic, Canada); Siyu Lin (Beijing Jiaotong University & University of Victoria, P.R. China); Lin Cai (University of Victoria, Canada)
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A Go-back-N HARQ Time Bundling for Machine Type Communication devices in LTE TDD

Shiann-Tsong Sheu (National Central University, Taiwan); Kai-Hua Kuo (National Central University, Taiwan); Chih-Cheng Yang (National Central University, Taiwan); Yen-Ming Sheu (National Central University, Taiwan)
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MAC 09: Cognitive Radio II

Obtaining Consistent Good/Bad Plan Set in the Presence of Faults

Chien-Fu Cheng (Tamkang University, Taiwan)
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Traffic Pattern-Based Reward Maximization for Secondary User in Dynamic Spectrum Access

Muhammad Ejaz Ahmed (Kyung Hee University, Korea); Ju Bin Song (Kyung Hee University, Korea); Zhu Han (University of Houston, USA)
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Modeling and Analysis of An Opportunistic Transmission Scheme Based on Channel Quality Information in Multi-Channel Cognitive Networks

Xiaodong Peng (Tsinghua University, P.R. China); Limin Xiao (Tsinghua University, P.R. China); Xiaofeng Zhong (Tsinghua University, P.R. China); Yunzhou Li (Tsinghua University, P.R. China); Shidong Zhou (Tsinghua University, P.R. China)
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Game-Theoretic Channel Selection for Interference Mitigation in Cognitive Radio Networks with Block-Fading Channels

Yuhua Xu (Institute of Communications Engineering, PLA University of Science and Technology, P.R. China); Alagan Anpalagan (Ryerson University, Canada); Qihui Wu (PLA University of Sci. & Tech., P.R. China); Jinlong Wang (PLA University of Science and Technology, P.R. China); Liang Shen (PLA University of Science and Technology, P.R. China); Gao Zhan (Institute of Communications Engineering, P.R. China)
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Resource Discovery Algorithms for Channel Aggregation in Cognitive Radio Networks

Luca Zappaterra (The George Washington University, USA); Joseph Gomes (Bowie State University, USA); Amrinder Arora (The George Washington University, USA); Hyeong-Ah Choi (The George Washington University, USA)
pp. 309-314

Common Control Channel Assignment in Cognitive Radio Networks Using Potential Game Theory

Yanqing Liu (Baylor University, USA); Liang Dong (Baylor University, USA); Robert J. Marks (Baylor University, USA)
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MAC 24: Poster Session I

CPR: A CRC-Based Packet Recovery Mechanism for Wireless Networks

Sheng-Shih Wang (Minghsin University of Science and Technology, Taiwan); Shiann-Tsong Sheu (National Central University, Taiwan); Hwei-Yu Lee (National Central University, Taiwan); Ting-Rong O (National Central University, Taiwan)
pp. 321-326

An Approximation Downlink Bandwidth Allocation Scheme for IEEE 802.16 OFDMA System

Jang-Ping Sheu (National Tsing Hua University, Taiwan); Chen-Hao Ko (National Tsing Hua University, Taiwan); Chuang Ma (National Tsing Hua University, Taiwan)
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Outlier Detection for Training-Based Adaptive Protocols

Hui Liu (Southern Methodist University, USA); Jialin He (Southern Methodist University, USA); Dinesh Rajan (Southern Methodist University, USA); Joseph D. Camp (Southern Methodist University, USA)
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Rate Adaptation and Base Station Reconfiguration for Battery Efficient Video Download

Sujit Dey (University of California, San Diego, USA); Ranjini Garani Guruprasad (University of California, San Diego, USA)
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Joint Optimization of Channel Allocation and AP Association in Variable Channel-width WLANs

Xiaohui Chen (Huazhong University of Science and Technology, P.R. China); Wenqing Cheng (Huazhong University of Science and Technology, P.R. China); Wei Yuan (Huazhong University of Science and Technology, P.R. China); Wei Liu (Huazhong University of Science and Technology, P.R. China); Xu Jing (Huazhong University of Science and Technology, P.R. China)
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An Enhanced Multi-channel MAC for Vehicular Ad Hoc Networks

Duc Ngoc Minh Dang (Kyung Hee University, Korea); Hanh Ngoc Dang (Ho Chi Minh City University of Technology, Vietnam); Cuong T. Do (Kyung Hee University, Korea); Choong Seon Hong (Kyung Hee University, Korea)
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Cross-Layer Design for LTE System with Jointly AMC and ARQ on Fading Channel

Desheng Wang (Huazhong University of Science and Technology, P.R. China); Yingyong Fang (Wuhan Research Institute of Posts and Telecommunications, P.R. China); Li Lu (University of HUST & Optical Lab of WuHan National, P.R. China); Wu Jianxue (Wuhan Research Institute of Posts and Telecommunication, P.R. China)
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NET 13: Wireless Sensor and Mesh Networks IV

Convergecast in ZigBee Tree-Based Wireless Sensor Networks

Meng-Shiuan Pan (Tamkang University, Taiwan); Ping-Lin Liu (Tamkang University, Taiwan); Chien-Fu Cheng (Tamkang University, Taiwan)
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Minimizing Remote Monitoring Cost of Wireless Sensor Networks

Xu Xu (The Australian National University, Australia); Weifa Liang (The Australian National University, Australia); Zichuan Xu (Australian National University, Australia)
pp. 1476-1481

Unequal Error Protection Distributed Network-Channel Coding Based on LT Codes for Wireless Sensor Networks

Jing Yue (Xidian University, P.R. China); Zihuai Lin (University of Sydney, Australia); Jun Li (University of Sydney, Australia); Baoming Bai (Xidian University, P.R. China); Branka Vucetic (The University of Sydney, Australia)
pp. 1482-1487

Virtual Edge Based Coverage Hole Detection Algorithm in Wireless Sensor Networks

Yunzhou Zhang (Northeastern University, P.R. China); Xiaohua Zhang (Northeastern University, P.R. China); Zeyu Wang (Northeastern University, P.R. China); Honglei Liu (Northeastern University, P.R. China)
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Mending Barrier Gaps via Mobile Sensor Nodes with Adjustable Sensing Ranges

Xianjun Deng (Huazhong University of Science and Technology & University of South China, P.R. China); Bang Wang (Huazhong University of Science and Technology, P.R. China); Changqing Wang (Huazhong University of Science and Technology, P.R. China); Han Xu (Huazhong University of Science and Technology, P.R. China); Wenyu Liu (Huazhong University of Science and Technology, P.R. China)
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Data Delivery Scheme for Wireless Sensor Network Powered by RF Energy Harvesting

Winston K.G. Seah (Victoria University of Wellington, New Zealand); Jonathan Olds (Victoria University of Wellington, New Zealand)
pp. 1498-1503

NET 14: Network Coding II

Channel Allocation and Time Scheduling in Multi-channel Wireless Networks Using Network Coding

Maryam Mohseni (McMaster University, Canada); Dongmei Zhao (McMaster University, Canada)
pp. 1504-1509

Adaptive Redundancy Control with Network Coding in Multi-hop Wireless Networks

Thuong Van Vu (Université Pierre et Marie Curie, France); Nadia Boukhatem (Telecom ParisTech, France); Thi Mai Trang Nguyen (Université Pierre et Marie Curie & LIP6, France); Guy Pujolle (University Pierre et Marie Curie - Paris 6, France)
pp. 1510-1515

On Symbol Mapping for FQPSK Modulation Enabled Physical-Layer Network Coding

Jiao Qin (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Zhihua Yang (Harbin Institute of Technology, P.R. China); Jian Jiao (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Qinyu Zhang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Xiaodong Lin (University of Ontario Institute of Technology, Canada); Bin Cao (Harbin Institute of Technology Shenzhen Graduate School & University of Waterloo, P.R. China)
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Segment Linear Network Coding in Wireless Sensor Networks

YiJun Guo (Beijing University of Post and Telecommunication, P.R. China); JianJun Hao (Beijing University of Posts and Telecommunications, P.R. China); Guangxin Yue (Beijing University of Posts and Telecommunications, P.R. China)
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Good coupling between LDPC-Staircase and Reed-Solomon for the design of GLDPC codes for the Erasure Channel

Ferdaouss Mattoussi (INRIA, France); Bessem Sayadi (Alcatel-Lucent Bell-Labs, France); Vincent Roca (INRIA Rhône-Alpes, France)
pp. 1528-1533

Network Coding with Remix Qualification for Multicasting in Delay-Tolerant Networks

Yu-Feng Hsu (National Central University, Taiwan); Chih-Lin Hu (National Central University, Taiwan)
pp. 1534-1539

NET 15: Wireless Networks II

Optimization Algorithms for Epidemic Evolution in Broadcast Networks

Xiangping Zhai (City University of Hong Kong, Hong Kong); Liang Zheng (City University of Hong Kong, Hong Kong); Jianping Wang (City University of Hong Kong, Hong Kong); Chee Wei Tan (City University of Hong Kong, Hong Kong)
pp. 1540-1545

An intercell coordination admission control and scheduling scheme for delay-tolerant M2M service

Long Suo (Xidian University, P.R. China); Hongyan Li (Xidian University, P.R. China); Yinghong Ma (Xidian University, P.R. China); Jiandong Li (Xidian University, P.R. China)
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A Statistical Algorithm for Multi-Objective Handover Optimization Under Uncertainties

Qi Liao (Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institute, Germany); Slawomir Stanczak (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Federico Penna (Fraunhofer Heinrich Hertz Institute, Germany)
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Small-World Networks Empowered Large Machine-to-Machine Communications

Lei Gu (National Taiwan University, Taiwan); Shih Chun Lin (Purdue University, USA); Kwang-Cheng Chen (National Taiwan University, Taiwan)
pp. 1558-1563

Euclidean Distance Based Handoff Algorithm for Fingerprint Positioning of WLAN System

Deyue Zou (Harbin Institute of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China); Shuai Han (Harbin Institute of Technology, P.R. China)
pp. 1564-1568

A Clustering-based Context-Aware Mechanism for IEEE 802.21 Media Independent Handover

Miao Xiong (Department of Computing, The Hong Kong Polytechnic University, Hong Kong); Jiannong Cao (Hong Kong Polytechnic Univ, Hong Kong)
pp. 1569-1574

Panel 5: Green Cellular Networks

Prof. Teng Joon Lim

Bio: Teng Joon Lim grew up in Singapore, obtained the B.Eng. degree in Electrical Engineering with first-class honours from the National University of Singapore in 1992, and the Ph.D. degree from the University of Cambridge in 1996. From September 1995 to November 2000, he was a researcher at the Centre for Wireless Communications in Singapore, one of the predecessors of the Institute for Infocomm Research (I2R). From December 2000 to May 2011, he was a faculty member at the University of Toronto's Edward S. Rogers Sr. Department of Electrical and Computer Engineering. Since June 2011, he has been a Professor at the National University of Singapore's ECE Department, and currently serves as the director of the Communications and Networks group. His research interests span many topics within wireless communications, including multi-carrier modulation, MIMO, cooperative diversity, energy-efficient communications, cognitive radio, and random networks, and he has published widely in these areas. He has served/is serving on the editorial boards of IEEE Transactions on Wireless Communications, IEEE Wireless Communications Letters, Wiley Transactions on Emerging Telecommunications Technologies (ETT), IEEE Transactions on Vehicular Technology and IEEE Signal Processing Letters. He serves regularly on the technical program committees of major international conferences such as ICC and Globecom, and is the founding chair of the Special Interest Group on Green Cellular Networks within IEEE Comsoc's Technical Sub-Committee on Green Communications and Computing (TSCGCC).

Panelists:

Dr. Jinsong Wu, Bell Labs China, China
Dr. Sumei Sun, Institute for Infocomm Research, Singapore
Prof. Marco Di Renzo, Supelec
Prof. Vinod Sharma, Indian Institute of Science, India
Dr. Shunqing Zhang, Huawei, China
Dr. Junyi Li, Vice President of Qualcomm, USA

Abstract:

Traffic in cellular communications systems is expected to increase by some 3 orders of magnitude within the next decade, due mainly to the rapidly growing penetration of devices with high-resolution displays and built-in cameras, such as smartphones and tablets. These tempt users to access graphics-heavy content on the Internet, and also to upload graphics-heavy content to the Internet. Growth at this rate cannot be sustained using the cellular architecture that we have depended on to date, in which geographical areas are carved up into non-overlapping cells, each served by only one base station that is connected to the backbone network through high-speed radio or optical backhaul links. Ideas for new network architectures that may provide the necessary higher data throughput have been raised recently - these include cloud RAN (radio access network), small cells such as femto-cells and pico-cells, and cooperative multi-point (CoMP) transmission.

While traffic growth drives the search for new ideas to support the increased throughput anticipated, it is equally clear that any new system architecture must be more energy efficient than current systems. After all, increasing the energy consumption of a cellular system by 3 orders of magnitude would create an unacceptable increase in energy consumption by wireless service providers, leading to higher user charges and reduced profit margins, besides being out of step with the heightened environmental awareness of the 21st century.

IEEE WCNC is the premier international forum for wireless communication researchers, and is therefore the ideal venue for a discussion of the key technical challenges facing cellular networks of the future. This proposed panel is organized by the newly created Special Interest Group on Green Cellular Networks (SIGGCN), which has attracted members from all around the globe (see <https://sites.google.com/site/greencellularnetworks/>). Questions to be examined will include:

- How important is energy efficiency relative to bandwidth efficiency?
- Does the freeing up of TV bands provide sufficient capacity to satisfy most future needs?
- How should renewable energy be incorporated into cellular networks?
- Is it more "green" to perform joint processing in the cloud i.e. cloud-RAN, or distributed processing at base stations?
- Do small cells in a heterogeneous network operate at a higher energy efficiency than micro-cells in a flat network architecture?

Given the open nature of these questions, we can look forward to the most interesting debate that will make a positive and deep impression on the audience.

PHY 14: Network Coding II

A Fully Distributed Opportunistic Network Coding Scheme for Cellular Relay Networks

Yulong Zou (University of Western Ontario, Canada); Jia Zhu (Nanjing University of Posts and Telecommunications, P.R. China); Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China)
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On The Physical Layer Network Coded LDPC Codes for A Multiple-Access Relaying System

Jun Li (University of Sydney, Australia); Zihuai Lin (University of Sydney, Australia); Jin Xu (ZTE, P.R. China); Branka Vucetic (The University of Sydney, Australia)
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Exact Outage Probability and Power Allocation of Two Nodes in Cooperative Networks

Jin-Taek Seong (Gwangju Institute of Science and Technology, Korea); Heung-No Lee (Gwangju Institute of Science and Technology, Korea)
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Reliable Throughput for Two-way Relay Systems by Network Coding

Wanhua Lin (Southeast University, P.R. China); Xiangyang Wang (Southeast University, P.R. China); Qian Li (Southeast University, P.R. China)
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Space-Time Analog Network Coding for Multiple Access Relay Channels

Lili Wei (Utah State University, USA); Wen Chen (Shanghai Jiao Tong University, P.R. China)
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Selection of Spatially-distributed Relays for Two-way Relaying with Network Coding

Jiang Yunxiang (The Hong Kong Polytechnic University & Beijing Jiaotong University, Hong Kong); Francis C.M. Lau (The Hong Kong Polytechnic University, Hong Kong); Zeeshan Sattar (Hong Kong Polytechnic University, Hong Kong); Qingfeng Zhou (Hefei University of Technology, P.R. China)
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PHY 15: Cognitive Radio II

Performance Bounds on Cyclostationary Feature Detection over Fading Channels

Juei-Chin Shen (University of Manchester, United Kingdom); Emad Alsusa (Manchester University, United Kingdom); Daniel K. C. So (University of Manchester, United Kingdom)
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Cooperative Two-Way Selective Relaying in Spectrum-Sharing Systems with Distributed Beamforming

Ali Afana (Concordia University, Canada); Ali Ghrayeb (Texas A&M University at Qatar, Qatar); Vahid Asghari (University of Quebec, INRS-EMT, Canada); Sofiene Affes (INRS-EMT, Canada)
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Spectrum Sharing On Interference Channels With A Cognitive Relay

Qiang Li (Huazhong University of Science and Technology, P.R. China); Ashish Pandharipande (Philips Research Laboratories, The Netherlands); See Ho Ting (Nanyang Technological University, Singapore)
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Area Spectral Efficiency of Underlay Cognitive Radio Transmission over Rayleigh Fading Channels

Lei Zhang (University of Victoria, Canada); Hong-Chuan Yang (University of Victoria, Canada); Mazen Omar Hasna (Qatar University, Qatar)
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Effective Capacity and Interference Constraints in Multichannel Cognitive Radio Network

Mohamed Elalem (Ryerson Canada, Canada); Lian Zhao (Ryerson University, Canada)
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Effective Capacity Optimization Based on Overlay Cognitive Radio Network in Gamma Fading Environment

Mohamed Elalem (Ryerson Canada, Canada); Lian Zhao (Ryerson University, Canada)
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PHY 16: Communication Theory III

A New Lower Bound on Error Probability for Nonuniform Signals over AWGN Channels

Zhiwei Mao (Fairleigh Dickinson University, USA); Julian Cheng (University of British Columbia, Canada); Jian Shen (, USA)
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Comparison of different multicast strategies in wireless identically distributed channels

Erzim Veshi (TU Darmstadt, Germany); Alexander Kuehne (TU Darmstadt, Germany); Anja Klein (TU Darmstadt, Germany)
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Maximizing Weighted Sum-Rate in the Uplink of Wireless Systems Using a Second-Order Approximation

Joerg Schaepperle (Alcatel-Lucent, Germany)
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The Two-hop MISO Broadcast Network with Quantized Delayed CSIT

Zhao Wang (Royal Institute of Technology (KTH), Sweden); Chao Wang (Tongji University, P.R. China); Ming Xiao (Royal Institute of Technology, Sweden); Mikael Skoglund (KTH Royal Institute of Technology, Sweden)
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Effect of Receiver Spatial Diversity on the Degrees of Freedom Region in Multi-Cell Random Beamforming

Hieu Duy Nguyen (National University of Singapore, Singapore); Rui Zhang (National University of Singapore, Singapore); Hon Tat Hui (National University of Singapore, Singapore)
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Finite-SNR Diversity-Multiplexing Tradeoff for Spectrum-Aggregated Transmission

Jun Li (Zhejiang University, P.R. China); Zhaoyang Zhang (Zhejiang University, P.R. China); Chao Wang (Zhejiang University, P.R. China); Wei Wang (Zhejiang University, P.R. China); Caijun Zhong (Zhejiang University, P.R. China)
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PHY 17: Limited and Delayed Feedback

Net Degrees of Freedom of Recent Schemes for the MISO BC with Delayed CSIT and Finite Coherence Time

Yohan Lejosne (EURECOM, France); Dirk Slock (Eurecom, France); Yi Yuan-Wu (Orange Labs, France)
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Analog Feedback for MIMO-OFDM Systems

Pengcheng Zhu (National Mobile Communications Research Lab., P.R. China); Yan Wang (National Mobile Communication Research Lab., Southeast University, P.R. China); Xiaohu You (National Mobile communication Research Lab., Southeast University, P.R. China); Yuanjie Li (Huawei Technologies, P.R. China)
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Feedback Granularity Control for Multiuser MIMO-OFDMA Systems

Hyun-Myung Kim (Pohang University of Science and Technology, Korea); Moonsik Min (POSTECH, Korea); Gi-Hong Im (POSTECH, Korea)
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User-Specific Coordination of Limited Feedback with Power Allocation in Multi-point System

Chi Zhang (Beijing University of Posts and Telecommunications, P.R. China); Chang Yongyu (Beijing University of Posts & Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)
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Opportunistic Feedback of Channel Information in Multi-user MIMO Environments

Jeong Soo Park (Seoul National University, Korea); Yong-suk Byun (Seoul National University, Korea); Moon Hyung Yoon (Seoul National University, Korea); Yong-Hwan Lee (Seoul National University, Korea)
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Enhanced Limited Rate Implicit CSI Feedback and its Usage in Covariance Matrix Based MU-MIMO

Yang Li (Xi'an Jiaotong University, P.R. China); Shihua Zhu (Xi'an Jiaotong University, P.R. China); Hui Tong (Panasonic Beijing Laboratories, P.R. China); Ming Xu (Panasonic Beijing Laboratories, P.R. China)
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PHY 18: Interference Alignment

Achievable Diversity Gain of Interference Channel

Shenghui Song (The Hong Kong University of Science and Technology, Hong Kong); Jing Zhong (HKUST, Hong Kong); Khaled B. Letaief (The Hong Kong University of Science and Technology, Hong Kong)
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Distributed Interference Alignment and Power Control for Wireless MIMO Interference Networks

Hamed Farhadi (KTH Royal Institute of Technology, Sweden); Chao Wang (Tongji University, P.R. China); Mikael Skoglund (KTH Royal Institute of Technology, Sweden)
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Design of ESPAR Based Blind Interference Alignment for Cellular Systems

Rongrong Qian (Heriot-Watt University, United Kingdom); Mathini Sellathurai (Heriot-Watt University, United Kingdom)
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A Novel Interference Cancellation Scheme with Constellation Alignment

Rui Wang (The South University of Science and Technology of China, Hong Kong); Yinggang Du (Huawei Technologies Co., Ltd, P.R. China); Yifan Chen (South University of Science and Technology of China, P.R. China)
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Enhanced Interference Whitening for Co-Channel Interference Suppression

Yingqun Yu (Samsung US R&D Center, USA); Jungwon Lee (Samsung US R&D Center, USA); Inyup Kang (Samsung Electronics, USA)
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New Uplink Opportunistic Interference Alignment: An Active Alignment Approach

Hui Gao (Singapore University of Technology and Design, Singapore); Johann Leithon (National University of Singapore, Singapore); Chau Yuen (Singapore University of Technology and Design, Singapore); Himel A Suraweera (Singapore University of Technology and Design, Singapore)
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PHY 52: Channel Estimation II - (Poster Session I)

Improved Adaptive Sparse Channel Estimation Based on the Least Mean Square Algorithm

Guan Gui (Tohoku University, Japan); Wei Peng (Tohoku University, Japan); Fumiyuki Adachi (Tohoku University, Japan)
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Channel Estimation and ICI Cancellation for High Mobility Pilot-Aided MIMO-OFDM Systems

Neda Aboutorab (Australian National University, Australia); Wibowo Hardjawana (The University of Sydney, Australia); Branka Vucetic (The University of Sydney, Australia)
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Frequency Domain Averaging for Channel Estimation in OQAM-OFDM systems

DeJin Kong (Huazhong University of Science and Technology, P.R. China); Daiming Qu (Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China); Peng Gao (China Mobile Group Design Institute Co., Ltd., P.R. China); Chonggang Wang (InterDigital Communications, USA); Tao Jiang (Huazhong University of Science and Technology, P.R. China)
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A Robust Least Square Channel Estimation Algorithm for OFDM Systems Under Interferences

Yang Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)
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Low Complexity Channel Estimation in TDD Coordinated Multi-point Transmission Systems

Zhilin Chen (Beihang University, P.R. China); Xueying Hou (Beihang University, P.R. China); Shengqian Han (Beihang University, P.R. China); Chenyang Yang (Beihang University, P.R. China); Gang Wang (NEC Labs, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
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Multi-Element Antenna with Close Spacing for Highly Mobile OFDM Systems

Ting-Li Liu (National Taiwan University, Taiwan); Wei-Ho Chung (Academia Sinica, Taiwan); Li-Sheng Chen (National Taiwan University, Taiwan); Zhang Hongke (Beijing Jiaotong University, P.R. China); Sy-Yen Kuo (National Taiwan University, Taiwan)
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A Genetic Algorithm Approach for Detecting Hierarchical and Overlapping Community Structure in Dynamic Social Networks

Chun-Cheng Lin (National Chiao Tung University, Taiwan); Wan-Yu Liu (Aletheia University, Taiwan); Der-Jiunn Deng (National Changhua University of Education, Taiwan)
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Transparently Secure Smartphone-based Social Networking

Yongdong Wu (Institute for Infocomm Research, Singapore); Zhigang Zhao (Institute for Infocomm Research, Singapore); Xuejun Wen (Institute for Infocomm Research, Singapore)
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Yanbo Ma (Shanghai Jiao Tong University, P.R. China); Chen Wang (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China); Zhu Han (University of Houston, USA)
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Generation of a new IDS Test Dataset: Time to Retire the KDD Collection

Gideon Creech (University of New South Wales @ Canberra, Australia); Jiankun Hu (University of New South Wales, Australia)
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Exploiting cluster multicast for P2P streaming application in cellular system

Mohammad Zulhasnine (Carleton University, Canada); Changcheng Huang (Carleton University, Canada); Anand Srinivasan (Carleton University, Canada)
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Design of Cooperation-Based Remote Laboratory for Distributed Experimentation and Simulation

Lei Ning (Communication Research Center, Harbin Institute of Technology, P.R. China); Zhen-Yong Wang (Harbin Institute of Technology, P.R. China); Qing Guo (Harbin Institute of Technology, P.R. China); Kai-yuan Jiang (Communication Research Center, Harbin Institute of Technology, P.R. China); Ming Li (Communication Research Center, Harbin Institute of Technology, P.R. China)
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On the Construction of Radio Environment Maps for Cognitive Radio Networks

Zhiqing Wei (Beijing University of Posts and Telecommunications, P.R. China); Qixun Zhang (Beijing University of Posts and Telecommunications, P.R. China); Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (University of Victoria, Canada); T. Aaron Gulliver (University of Victoria, Canada)
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Evanny Obregon (Royal Institute of Technology (KTH), Sweden); Ki Won Sung (KTH Royal Institute of Technology, Sweden); Jens Zander (KTH Royal Institute of Technology, Sweden)
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Joint Relay Selection and Power Allocation with QoS Support for Cognitive Radio Networks

Yang Yu (Beijing University of Posts and Telecommunications, P.R. China); Weidong Wang (Beijing University of Posts and Telecommunications, P.R. China); Chaowei Wang (Beijing University of Posts and Telecommunications & Schoole of Electronics Engineering, P.R. China); Feiyan Yan (Beijing University of Posts and Telecommunications, P.R. China); Yinghai Zhang (Beijing University of Posts and Telecommunications, P.R. China)
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Cross-layer Cognitive CMT for Efficient Multimedia Distribution over Multi-homed Wireless Networks

Yuanlong Cao (Beijing University of Posts and Telecommunications, P.R. China); Changqiao Xu (Beijing University of Posts and Telecommunications, P.R. China); Jianfeng Guan (Beijing University of Posts and Telecommunications, P.R. China); Jia Zhao (Beijing Jiaotong University, P.R. China); Zhang Hongke (Beijing Jiaotong University, P.R. China)
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Computer Prediction of Primary Contour and Service Areas for Unlicensed Radio Systems Operating in TV White Space

Gabriel Villardi (National Institute of Information and Communications Technology (NICT), Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)
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A Novel Paradigm for Context-aware Content Pre-fetching in Mobile Networks

Pavan Kumar Kamaraju (University Of Maryland Baltimore County, USA); Pietro Lungaro (Royal Institute of Technology (KTH), Sweden); Zary Segall (KTH Royal Institute of Technology, Sweden)
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Achieving Optimum Network Throughput and Service Differentiation for IEEE 802.11e EDCA Networks

Yayu Gao (City University of Hong Kong, Hong Kong); Sun Xinghua (City University of Hong Kong, Hong Kong); Lin Dai (City University of Hong Kong, Hong Kong)
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Enhancing WLAN Backoff Procedures for Downlink MU-MIMO Support

Chunhui Zhu (Samsung Electronics, USA); Anirudh Bhatt (Samsung Electronics, India); Youngsoo Kim (Samsung Electronics, Korea); Chiu Ngo (Samsung, USA)
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A Novel Beacon-based Collision-Free Channel Access Mechanism over IEEE 802.11 WLANs

Mehmet Fatih Tuysuz (Gebze Institute of Technology, Turkey); Haci Ali Mantar (Gebze Institute of Technology, Turkey); Gokhan Celik (Gebze Institute of Technology, Turkey); Mahmud Celenlioglu (Gebze Institute of Technology, Turkey)
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Specification versus reality: Experimental evaluation of link capacity estimation in IEEE 802.11

Stephen M Glass (NICTA & University of Queensland, Australia); Jonathan Guerin (University of Queensland, Australia); Peizhao Hu (NICTA, Australia); Marius Portmann (University of Queensland, Australia); Wee Lum Tan (NICTA, Australia)
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An Uninterrupted Collision-Free Channel Access Scheme over IEEE 802.11 WLANs

Mehmet Fatih Tuysuz (Gebze Institute of Technology, Turkey); Haci Ali Mantar (Gebze Institute of Technology, Turkey); Gokhan Celik (Gebze Institute of Technology, Turkey); Mahmud Celenlioglu (Gebze Institute of Technology, Turkey)
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Dawei Gong (Stony Brook University, USA); Miao Zhao (Multimedia Networking Research Lab of Huawei Technologies, USA); Yuanyuan Yang (Stony Brook University, USA)
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MAC 11: Cooperative Communications I

Coordinated Dynamic Physical Carrier Sensing based on Local Optimization in Wireless Ad hoc Networks

Xinming Zhang (University of Science and Technology of China, P.R. China); Guoqing Qiu (University of Science and Technology of China, P.R. China); Zhilong Dai (University of Science and Technology of China, P.R. China); Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea)
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An Enhanced Cooperative MAC Protocol Based on Perceptron Training

Peijian Ju (University of New Brunswick, Canada); Wei Song (University of New Brunswick, Canada); Dizhi Zhou (University of New Brunswick, Canada)
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Cooperative Wireless Transmissions of Dynamic Power Price and Supply Information for Smart Grid

Peng-Yong Kong (Khalifa University of Science, Technology & Research (KUSTAR), UAE); Youngnam Han (KAIST, Korea)
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A Cooperative MAC Protocol Based on 802.11 in Wireless Ad hoc Networks

Jang-Ping Sheu (National Tsing Hua University, Taiwan); Jung-Tzu Chang (National Tsing Hua University, Taiwan); Chuang Ma (National Tsing Hua University, Taiwan)
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Aggregate Throughput Maximization in a Hierarchical Cooperation Scheme under Consideration of Packet Arrival Rate, Control and Data Overhead

Inkyu Bang (Korea Advanced Institute of Science and Technology, Korea); Eunmi Chu (Korea Advanced Institute of Science and Technology, Korea); Taehoon Kim (Korea Advanced Institute of Science and Technology, Korea); Seong Hwan Kim (McGill University, Korea); Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea)
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A Cooperative ARQ Scheme for Infrastructure WLANs

Nischal S (Indian Institute of Science, India); Vinod Sharma (Indian Institute of Science, India)
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Self-Organizing Fractional Frequency Reuse for Femtocells Using Adaptive Frequency Hopping

Markus Putzke (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University & Communication Networks Institute, Germany)
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Distributed Resource Allocation for OFDMA Femtocell Networks with Macrocell Protection

Vu Nguyen Ha (INRS, University of Quebec, Canada); Long Bao Le (INRS, University of Quebec, Canada)
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On the Cooperation Between Cognitive Radio Users and Femtocell Networks for Cooperative Spectrum Sensing and Self-Organization

Yun Li (The University of Tokyo, Japan); Honggang Zhang (Université Européenne de Bretagne (UEB) and Supelec & Zhejiang University, France); Tohru Asami (The University of Tokyo, Japan)
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Dual-Utility based Green Power Game in Two-Tier OFDMA Femtocell Networks with Firefly Algorithm

Wei Li (Beijing University of Posts and Telecommunications, P.R. China); Wei Zheng (BUPT, P.R. China); Tao Su (Beijing University of Posts and Telecommunications, P.R. China); Xiangming Wen (Beijing University of Posts and Telecommunications, P.R. China)
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Distributed Uplink Power Control for Two-Tier Femtocell Networks via Convex Pricing

Liu Jingfang (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (Beijing University of Posts and Telecommunications, P.R. China); Wei Zheng (BUPT, P.R. China); Xidong Wang (Beijing University of Posts and Telecommunications, P.R. China); YuanBao Xie (Beijing University of Posts and Telecommunications, P.R. China)
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Exponential Backoff in Frequency-domain for Random Access in OFDMA Femtocells

Abdulmohsen Mutairi (University of Washington, USA); Sumit Roy (University of Washington, USA)
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Distributed Power Control and Pricing for Two-Tier OFDMA Femtocell Networks Using Fictitious Game

Wei Li (Beijing University of Posts and Telecommunications, P.R. China); Tao Su (Beijing University of Posts and Telecommunications, P.R. China); Wei Zheng (Beijing University of Posts and Telecommunications, P.R. China); Xiangming Wen (Beijing University of Posts and Telecommunications, P.R. China)
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Capacity Gains from Multipoint Single Frequency Transmission in HSPA+

Ahlem Khlass (TELECOM ParisTech, France); Salah Eddine Elayoubi (Orange Labs, France); Thomas Bonald (Telecom ParisTech, France)
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Resource Allocation for Multi-Channel Multi-Radio Wireless Backhaul Networks: A Game-Theoretic Approach

Li-Hsing Yen (National University of Kaohsiung, Taiwan); Yuan-Kao Dai (National University of Kaohsiung, Taiwan); Kuang-Hui Chi (National Yunlin University of Science & Technology, Taiwan)
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Opportunistic and Efficient Resource Block Allocation Algorithms for LTE Uplink Networks

Fatima Zohra Kaddour (Telecom Paristech & ISEP, France); Mylene Pischella (CNAM, France); Philippe Martins (Telecom Paristech, France); Emmanuelle Vivier (Institut Supérieur d'Electronique de Paris, France); Lina Mroueh (Institut Supérieur d'Electronique de Paris, France)
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Distributed Flexible Channel Assignment in WLANs

Chih-Cheng Hsu (National Taiwan University, Taiwan); Yi-An Liang (National Taiwan University, Taiwan); Jose Luis Garcia Gomez (National Taiwan University, Taiwan); Cheng-Fu Chou (NTU, Taiwan); Kate Ching-Ju Lin (Academia Sinica, Taiwan)
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On the impact of channel coding on average packet delay in a multiuser environment

Anshoo Tandon (National University of Singapore, Singapore); Mehul Motani (National University of Singapore, Singapore); Vineet Srivastava (Broadcom, India)
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A Probabilistic Approach for V2V Relay Contention based on Channel State Information

Sok-Ian Sou (National Cheng Kung University, Taiwan); Bing-Jyun Lin (National Cheng Kung University, Taiwan); Yinman Lee (National Chi Nan University, Taiwan)
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Investigation on Energy Efficiency of OFDM-based Two-stage Cooperative Multicast with CP Combining

Hang Liu (Chinese Academy of Science, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Lin Tian (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Haihua Chen (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Xue Han (Institute of Computing Technology Chinese Academy of Science, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
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Energy Efficient Transmission in Relay-Based Cooperative Networks Using Auction Game

Xiaoliang Zhang (Beijing University of Posts and Telecommunications, P.R. China); Hong Ji (Beijing University of Posts and Telecommunications, P.R. China); Yi Li (Beijing University of Posts and Telecommunications, P.R. China); Xi Li (Beijing University of Posts and Telecommunications, P.R. China)
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Distributed Antenna Aided Twin-Layer Femto-and Macro-Cell Networks Relying on Fractional Frequency-Reuse

Jie Zhang (University of Southampton & University of Electronic Science and Technology of China, United Kingdom); Fan Jin (University of Southampton, United Kingdom); Rong Zhang (University of Southampton, United Kingdom); Guang-Jun Li (UESTC, P.R. China); Lajos Hanzo (University of Southampton, United Kingdom)
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Relay Selection Considering MAC Overhead and Collision in Wireless Networks

Yun Li (Chongqing University of Posts and Telecommunications of China, P.R. China); Xiaofen Zhu (Chongqing University of Posts and Telecommunications, P.R. China); Chao Liao (Chongqing University of Posts and Telecommunications, P.R. China); Mahmoud Daneshmand (AT&T, USA)
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Hai Wang (Fudan University, P.R. China); Xunrui Yin (Fudan University, P.R. China); Chen Chen (Fudan University, P.R. China); Xin Wang (Fudan University, P.R. China)
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Gabriel E. Garcia (Chalmers University of Technology, Sweden); Srikar Muppirisetty (Chalmers University of Technology, Sweden); Henk Wymeersch (Chalmers University of Technology, Sweden)
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NET 17: Network Applications

Monitoring YouTube QoE: Is Your Mobile Network Delivering the Right Experience to your Customers?

Pedro Casas (Telecommunications Research Center Vienna (FTW), Austria); Raimund Schatz (Telecommunications Research Center Vienna (FTW), Austria); Tobias Hoßfeld (University of Wuerzburg, Germany)
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Social networks adding community-scale to context-aware connectivity management

Roberto R. F. Lopes (Norwegian University of Science and Technology - NTNU, Norway)
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Janne Seppänen (VTT, Finland); Martin Varela (VTT Technical Research Centre of Finland, Finland)
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Agent Based Autonomic Network Control and Management

Manzoor Ahmed Khan (TU Berlin, Germany)
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Peer Selection and Scheduling of H.264 SVC Video over Wireless Networks

Konstantinos Birkos (University of Patras, Greece); Christos Tselios (University of Patras, Greece); Tasos Dagiuklas (Hellenic Open University & University of Patras, Greece); Stavros Kotsopoulos (Wireless Telecommunications Laboratory, Greece)
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Distributed Load Balancing in a Multiple Server System by Shift-Invariant Protocol Sequences

Yupeng Zhang (the Chinese University of Hong Kong, Hong Kong); Wing Shing Wong (The Chinese University of Hong Kong, P.R. China)
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Impact of Vehicular Integration Effects on the Performance of DSRC Communications

Jérôme Härri (EURECOM, France); Hugues Tchouankem (Leibniz Universität Hannover & Institute of Communications Technology (IKT), Germany); Oliver Klemp (BMW Group Research and Technology, Germany); Oleksandr Demchenko (Bosch SoftTec GmbH, Germany)
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Augmenting Vehicular 3G Users through Inter-vehicle Communications

Chao Chen (Shanghai Jiao Tong University, P.R. China); Yanmin Zhu (Shanghai Jiao Tong University, P.R. China)
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A Markov Model of Safety Message Broadcasting for Vehicular Networks

Nilofar Toorchi (K. N. Toosi University of Technology, Iran); Mahmoud Ahmadian (K.N. Toosi University of Technology, Iran); Mohammad Sayad Haghighi (Deakin University, Australia); Yang Xiang (Deakin University, Australia)
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Performance Evaluation of IEEE 802.11p MAC Protocol in VANETs Safety Applications

Lusheng Miao (Tshwane University of Technology, South Africa); Karim Djouani (Tshwane University of Technology, South Africa); Ben Van Wyk (Tshwane University of Technology, Saudi Arabia); Yskandar Hamam (Tshwane University of Technology, South Africa)
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Effect of Fading Channel on Link Duration in Vehicular Ad Hoc Networks

Miao Hu (Beijing Jiaotong University, P.R. China); Zhangdui Zhong (Beijing Jiaotong University, P.R. China); Hao Wu (Beijing Jiaotong University, P.R. China); Minming Ni (University of Victoria & Beijing Jiaotong University, Canada)
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Wenyu Ren (Tsinghua University, P.R. China); Yong Li (Tsinghua University, P.R. China); Siyu Chen (Tsinghua University, P.R. China); Depeng Jin (Tsinghua University, P.R. China); Li Su (Tsinghua University, P.R. China)
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Jikai Yin (Shanghai Jiao Tong University, P.R. China); Gaofei Sun (Shanghai Jiao Tong University, P.R. China); Xinbing Wang (Shanghai Jiaotong University, P.R. China)
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The Asymptotic Connectivity of Random Cognitive Radio Networks

Zhiqing Wei (Beijing University of Posts and Telecommunications, P.R. China); Jianwei Liu (Beijing University of Posts and Telecommunications, P.R. China); Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (University of Victoria, Canada); T. Aaron Gulliver (University of Victoria, Canada)
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Cooperative Networking Towards Secure Communications for CRNs

Ning Zhang (University of Waterloo, Canada); Ning Lu (University of Waterloo, Canada); Nan Cheng (University of Waterloo, Canada); Jon Mark (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)
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General Analytical Framework for Cooperative Sensing and Access Trade-off Optimization

Tan Thanh Le (University of Quebec, Canada); Long Bao Le (INRS, University of Quebec, Canada)
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Je-Wei Chang (National Chiao Tung University, Taiwan); Chien Chen (National Chiao Tung University, Taiwan)
pp. 1938-1943

Delay Analysis of Epidemic Routing in Community-Based Delay Tolerant Networks

Qingshan Wang (Hefei University of Technology, P.R. China); Qi Wang (Hefei University of Technology, P.R. China)
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Local Node Stability-Based Routing for Wireless Mesh Networks

Mustapha Boushaba (University of Montreal, Canada); Abdelhakim Hafid (University of Montreal, Canada); Michel Gendreau (University of Montreal, Canada)
pp. 1950-1955

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Haojie Zhou (The University of Hong Kong, P.R. China); Ka-Cheong Leung (The University of Hong Kong, Hong Kong); Victor O. K. Li (University of Hong Kong, P.R. China)
pp. 1956-1961

A Game Theoretic Model for Stochastic Routing in Self-Organized MANETs

Sajal Sarkar (IIT Kharagpur, India); Raja Datta (Indian Institute of Technology Kharagpur, India)
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Energy Efficient Multi-Flow Routing in Mobile Sensor Networks

Nicolas Gouvy (Université Lille 1, France); Essia Hamouda (University of California Riverside, USA); Nathalie Mitton (Inria Lille - Nord Europe, France); Dimitrios Zorbas (Inria Lille - Nord Europe, France)
pp. 1968-1973

Performance Comparison of the RPL and LOADng Routing Protocols in a Home Automation Scenario

Mališa Vučinić (University of Grenoble, France); Bernard Tourancheau (CNRS Grenoble Informatics Laboratory UMR 5217, France); Andrzej Duda (Grenoble Institute of Technology, France)
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Fast Convergence Scheme for Potential-based Routing in Wireless Sensor Networks

Alireza Sheikhattar (University of Maryland College Park, USA); Mehdi Kalantari (University of Maryland, College Park, USA)
pp. 1980-1985

Performance of Source Routing in Ad Hoc Networks Based on Compound Pareto Statistics

Xian Liu (University of Arkansas at Little Rock, USA)
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Improving TCP Performance over Mobile Data Networks with Opportunistic Retransmission

Ke Liu (The Chinese University of Hong Kong, Hong Kong); Jack Y. B. Lee (The Chinese University of Hong Kong, Hong Kong)
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DMM-based Inter-domain Mobility Support for Proxy Mobile IPv6

Tien-Thanh Nguyen (EURECOM, France); Christian Bonnet (EURECOM, France)
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Traffic Aware Routing in Urban Vehicular Networks

Ting Cao (Shanghai Jiao Tong University, P.R. China); Xinchao Zhang (Shanghai Jiaotong University, P.R. China); Linghe Kong (Shanghai Jiao Tong University, P.R. China); Xiao-Yang Liu (Shanghai Jiao Tong University, P.R. China); Wei Shu (The University of New Mexico, USA); Min-You Wu (Shanghai JiaoTong University, P.R. China)
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Zhengwei Ni (Beijing University of Posts and Telecommunications, P.R. China); Xiaoyi Liu (University of California, Irvine, USA); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)
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Novel Hierarchical Modulation Scheme for Multi-user Transmission in Relay Systems

Chunlin Yan (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China); Anxin Li (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China); Atsushi Harada (DOCOMO Beijing Communications Laboratories Co., Ltd. & NTT DOCOMO, Inc., P.R. China)
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Partial Relay Selection with Fixed-Gain Relays and Outdated CSI in Underlay Cognitive Networks

Bin Zhong (University of Science and Technology Beijing (USTB), P.R. China); Yan Li (University of Science and Technology Beijing (USTB), P.R. China); Jun Wang (University of Science and Technology Beijing (USTB), P.R. China); Zhongshan Zhang (University of Science and Technology Beijing (USTB), P.R. China); Keping Long (University of Science and Technology Beijing, P.R. China)
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Gang Chen (Institute of Communications Engineering, PLAUST, P.R. China); Wei Zhong (College of Communications Engineering, PLAUST, P.R. China); Hua Tian (PLA University of Sci. and Tech., P.R. China)
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Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yuning Wang (BUPT, P.R. China); Ping Zhang (BUPT, P.R. China)
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Shih-Jung Lu (Academia Sinica & National Chiao Tung University, Taiwan); Ronald Y. Chang (Academia Sinica, Taiwan); Wei-Ho Chung (Academia Sinica, Taiwan)
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Fawaz Al-Qahtani (Texas A&M University at Qatar & Education City, Qatar); Caijun Zhong (Zhejiang University, P.R. China); Redha M Radaydeh (Alfaisal University, Saudi Arabia); Hussein Alnuweiri (Texas A&M University, Qatar)
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Jules Merlin Mouatcho Moualeu (University of KwaZulu-Natal, South Africa); Walaa Hamouda (Concordia University, Canada); HongJun Xu (University of KwaZulu-Natal, South Africa); Fambirai Takawira (University of KwaZulu-Natal, South Africa)
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Alessandro Guidotti (University of Bologna, Italy); Valentina Buccigrossi (University of L'Aquila, Italy); Marco Di Renzo (French National Center for Scientific Research (CNRS), France); Giovanni Emanuele Corazza (University of Bologna, Italy); Fortunato Santucci (University of L'Aquila, Italy)
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Liang Yang (Jinan University, P.R. China); Khalid A. Qaraqe (Texas A&M University at Qatar, USA); Erchin Serpedin (Texas A&M University, USA); Mohamed-Slim Alouini (King Abdullah University of Science and Technology (KAUST), Saudi Arabia)
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Han Li (The Hong Kong University of Science and Technology, Hong Kong); Mengwei Liu (Hong Kong University of Science and Technology, Hong Kong); Shenghui Song (The Hong Kong University of Science and Technology, Hong Kong); Khaled B. Letaief (The Hong Kong University of Science and Technology, Hong Kong)
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Bin Zhong (University of Science and Technology Beijing (USTB), P.R. China); Xu Zhang (University of Science and Technology Beijing (USTB), P.R. China); Yan Li (University of Science and Technology Beijing (USTB), P.R. China); Zhongshan Zhang (University of Science and Technology Beijing (USTB), P.R. China); Keping Long (University of Science and Technology Beijing, P.R. China)
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Hyun-Myung Kim (Pohang University of Science and Technology, Korea); Dongsik Kim (Pohang University of Science and Technology (POSTECH), Korea); Gi-Hong Im (POSTECH, Korea); Seongwoo Ahn (Samsung Electronics, Korea)
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Jingye Cao (Shanghai Jiao Tong University, P.R. China); Feng Yang (Shanghai Jiaotong University, P.R. China); Lianghai Ding (Shanghai Jiao Tong University, P.R. China); Liang Qian (Shanghai Jiao Tong University, P.R. China); Cheng Zhi (Shanghai Jiao Tong University, P.R. China)
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Hui Wang (Beijing University of Posts and Telecommunications, P.R. China); Qimei Cui (Beijing University of Posts and Telecommunications, P.R. China); Xiaofeng Tao (Beijing University of Posts and Telecommunications, P.R. China)
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Bin Jiang (Southeast University & National Mobile Communications Research Lab., P.R. China); Xin Xiong (Southeast University, P.R. China); Xiqi Gao (Southeast University, P.R. China)
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Linglong Dai (Tsinghua University, P.R. China); Zhaocheng Wang (Tsinghua University, P.R. China)
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Ahmed M. Hamza (University of Waterloo, Canada); Jon Mark (University of Waterloo, Canada)
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Hua Fu (INSA de Rennes & IETR, France); Matthieu Crussière (IETR - Electronics and Telecommunications Research Institute of Rennes (IETR) & INSA - National Institute of Applied Sciences, France); Maryline H elard (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France)
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Jian Zhao (Institute for Infocomm Research, Singapore); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Zander Zhongding Lei (Institute for Infocomm Research, Singapore)
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Xinming Zhang (University of Science and Technology of China, P.R. China); Leyi Wu (University of Science and Technology of China, P.R. China); Yue Zhang (University of Science and Technology of China, P.R. China); Dan Keun Sung (Korea Advanced Institute of Science and Technology, Korea)
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Shunqing Zhang (Huawei Technologies, Co. Ltd., P.R. China); Gaoning He (Huawei Technologies, P.R. China); Yan Chen (Huawei, P.R. China); Shugong Xu (Huawei, P.R. China)
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Muhammad Naeem (Ryerson University, Canada); Kandasamy Illanko (Ryerson University, Canada); Ashok K Karmokar (Ryerson University, Canada); Alagan Anpalagan (Ryerson University, Canada); Muhammad Jaseemuddin (Ryerson University, Canada)
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Leonardo S. Cardoso (INSA - Lyon, France); Marco Maso (Alcatel-Lucent Chair - Supélec, France); Mérouane Debbah (Supelec, France)
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Derrick Wing Kwan Ng (University Erlangen-Nürnberg, Germany); Ernest S. Lo (Centre Tecnològic de Telecomunicacions de Catalunya, Hong Kong); Robert Schober (University of British Columbia, Canada)
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Zheng Li (Carnegie Mellon University, USA); B. V. K. Vijaya Kumar (Carnegie Mellon University, USA); Fan Bai (General Motors, USA)
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Chenxin Zhang (Lund University, Sweden); Liang Liu (Lund University, Sweden); Yian Wang (Lund University, Sweden); Meifang Zhu (Lund University, Sweden); Ove Edfors (Lund University, Sweden); Viktor Öwall (Lund University, Sweden)
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Jinhong Wu (Samsung Information Systems America, USA); Mostafa El-Khomy (Samsung Research America, USA); Jungwon Lee (Samsung US R&D Center, USA); Inyup Kang (Samsung Electronics, USA)
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Xuzheng Lin (National University of Singapore, Singapore); Ming-Wei Wu (Zhejiang University of Science and Technology & National University of Singapore, P.R. China); Pooi-Yuen Kam (National University of Singapore, Singapore)
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Xiaojie Dai (University of Tsinghua, P.R. China); Yafeng Zhan (Tsinghua University, P.R. China); Ruyuan Zhang (Tsinghua University, P.R. China)
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Oussama Abassi (Université de Bretagne Sud & Lab-STICC, France); Laura Conde-Canencia (Université de Bretagne Sud, France); Mohammad Mansour (American University of Beirut, Lebanon); Emmanuel Boutillon (Université de Bretagne Sud, France)
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Kanapathippillai Cumanan (Newcastle University, United Kingdom); Yogachandran Rahulamathavan (City University London, United Kingdom); Sangarapillai Lambotharan (Loughborough University, United Kingdom); Zhiguo Ding (Newcastle University, United Kingdom)
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Yonggang Wang (PLA University of Science and Technology, P.R. China); Aijun Liu (PLA University of Science and Technology, P.R. China); Yingxian Zhang (PLA University of Science and Technology, P.R. China); Heng Wang (PLA University of Science and Technology, P.R. China); Kun Zhao (PLA University of Science and Technology, P.R. China)
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Saijie Yao (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, P.R. China); Hao Huang (Chinese Academy of Sciences, P.R. China); Hua Qian (Chinese Academy of Sciences, P.R. China)
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Jiong Shi (Zhejiang Wanli University, P.R. China); Liping Jin (Zhejiang Wanli University, P.R. China); Zhaoxi Fang (Zhejiang Wanli University, P.R. China); Ting Jiang (Beijing University of Posts & Telecommunications, P.R. China); Zheng Zhou (Beijing University of Posts and Telecommunications, P.R. China)
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Jian (Andrew) Zhang (CSIRO ICT Centre, Australia); Tao Yang (CSIRO, Australia); Zhuo Chen (CSIRO ICT Centre, Australia)
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Hung-Chun Chen (National Chiao Tung University, Taiwan); Yuan-Pei Lin (National Chiao Tung University, Taiwan)
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Hua Wang (Aalborg University & Nokia Siemens Networks, Denmark); Claudio Rosa (Nokia Siemens Networks/Aalborg, Denmark); Klaus Pedersen (Nokia Siemens Networks, Denmark)
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Yiran Xu (Utah State University, USA); Rose Qingyang Hu (Utah State University, USA); Qian (Clara) Li (Intel Corporation, P.R. China); Yi Qian (University of Nebraska-Lincoln, USA)
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Weisi Guo (University of Warwick & University of Cambridge, United Kingdom); Siyi Wang (University of South Australia, Australia); Yue Wu (University of Sheffield, United Kingdom); Jonathan Michael Rigelsford (The University of Sheffield, United Kingdom); Xiaoli Chu (University of Sheffield, United Kingdom); Timothy O'Farrell (University of Sheffield, United Kingdom)
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Jing Li (Alcatel-Lucent, Shanghai Bell, P.R. China)
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M. M. Aftab Hossain (Aalto University, Finland); Konstantinos Koufos (TKK, Finland); Riku Jäntti (Aalto University School of Electrical Engineering, Finland)
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Xuan Wang (University of Victoria, Canada); Lin Cai (University of Victoria, Canada)
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Javier Rubio (Universitat Politècnica de Catalunya, Spain); Antonio Pascual-Iserte (Universitat Politècnica de Catalunya, Spain)
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Alia Asheralieva (The University of Newcastle, Australia)
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Nan Bao (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Junchao Li (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Weiwei Xia (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Lianfeng Shen (National Mobile Communications Research Laboratory, Southeast University, P.R. China)
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Andres Kwasinski (Rochester Institute of Technology, USA)
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Sobia Jangsher (The University of Hong Kong, Hong Kong); Victor O. K. Li (University of Hong Kong, P.R. China)
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Yu Chen (University College London, United Kingdom); Izzat Darwazeh (University College London, United Kingdom)
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Sixing Yin (Beijing University of Posts and Telecommunications, P.R. China); Erqing Zhang (Beijing University of Posts and Telecommunications, P.R. China); Ji Li (Testing Center of The State Radio Monitoring Center, P.R. China); Liang Yin (Beijing University of Posts and Telecommunications, P.R. China); Shufang Li (Beijing University of Posts and Telecommunications, P.R. China)
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Richard Xue Chen (Utah State University, USA); Rose Qingyang Hu (Utah State University, USA); Qian (Clara) Li (Intel Corporation, P.R. China); Geng Wu (Intel Corporation, USA)
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Rui Zhu (Tsinghua, P.R. China)
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Xin He (University of Agder, Norway); Sriram Lakshmanan (Ruckus Wireless Inc., USA); Raghupathy Sivakumar (Georgia Institute of Technology, USA); Frank Y. Li (University of Agder, Norway)
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Poramate Tarasak (Institute for Infocomm Research, Singapore); Koichi Adachi (Institute for Infocomm Research (I2R), Singapore); Sumei Sun (Institute for Infocomm Research, Singapore)
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Kyuhoo Son (T-Mobile US, Inc., USA); Santosh V Nagaraj (San Diego State University, USA); Mahasweta Sarkar (San Diego State University, USA); Sujit Dey (University of California, San Diego, USA)
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Xuan Zhou (University of Electronic Science and Technology of China, P.R. China); Gang Feng (University of Electronic Science and Technology of China, P.R. China); Shuang Qin (University of Electronic Science and Technology of China, P.R. China)

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Zichen Liu (Institute of Computing Technology, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Xue Han (Institute of Computing Technology Chinese Academy of Science, P.R. China); Lin Tian (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jinlong Hu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
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Alexander Kuehne (TU Darmstadt, Germany); Adrian Loch (Technische Universität Darmstadt, Germany); Matthias Hollick (Technische Universität Darmstadt & Secure Mobile Networking Lab, Center for Advanced Security Research Darmstadt, Germany); Anja Klein (TU Darmstadt, Germany)
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Fan Li (Beijing Institute of Technology, P.R. China); Xiao He (Beijing Institute of Technology, P.R. China); Siyuan Chen (University of North Carolina at Charlotte, USA); Libo Jiang (Beijing Institute of Technology, P.R. China); Dongliang Wang (Xi'an Jiaotong University, P.R. China); Yu Wang (University of North Carolina at Charlotte, USA)
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Shuai Peng (Nanyang Technological University, Singapore); ChorPing Low (Nanyang Technological University, Singapore)
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Xiaoheng Deng (Central South University, P.R. China); Qiang Liu (Central South University, P.R. China); Xu Li (Central South University, P.R. China); Lin Cai (University of Victoria, Canada); Zhigang Chen (Central South University, P.R. China)
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Qin Zhu (Huazhong University of Science and Technology, P.R. China); Li Yu (Huazhong University of Science & Technology, P.R. China); Sangsha Fang (Huazhong University of Science and Technology, P.R. China)

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Nam Tuan Nguyen (University of Houston, USA); Rong Zheng (McMaster University, Canada); Zhu Han (University of Houston, USA)

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Qingzhong Li (Harbin Institute of Technology, P.R. China); Xuemai Gu (Harbin Institute of Technology, P.R. China); Hanqing Li (School of Electronics and Information Engineering, Harbin Institute of Technology, P.R. China); Tao Tang (Harbin Institute of Technology, P.R. China)
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Ming Liu (Institute of Electronics and Telecommunications of Rennes (IETR), France); Jean-François Héland (IETR, France); Matthieu Crussière (IETR - Electronics and Telecommunications Research Institute of Rennes (IETR) & INSA - National Institute of Applied Sciences, France); Maryline Héland (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France)
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Kunfeng Lai (The Hong Kong Polytechnic University, Hong Kong); Hong Tang (China Telecom Co. Ltd., P.R. China); Haiyang Wang (Simon Fraser University, Canada); Shengyong Ding (Guangzhou Research Institute China Telecom Co. Ltd., P.R. China); Dan Wang (The Hong Kong Polytechnic University, Hong Kong)
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Jingqiu Ren (School of Electric Information Engineering, Northeast Petroleum University, Daqing, Heilongjiang, P.R. China); Guanghua Zhang (Communication Research Center, Harbin Institute of Technology, P.R. China); Weidang Lu (Zhejiang University of Technology, P.R. China); Weixiao Meng (Harbin Institute of Technology, P.R. China)
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Linlin Sun (Beijing University of Posts and Telecommunications, P.R. China); Hui Tian (Beijing university of posts and telecommunications, P.R. China); Lingling Xu (Beijing University of Posts and Telecommunications & Key Laboratory of Universal Wireless Communications, Ministry of Education Wireless Technology Innov, P.R. China)
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Ziqiang Feng (Peking University, P.R. China); Lingyang Song (Peking University, P.R. China); Zhu Han (University of Houston, USA); Dusit Niyato (Nanyang Technological University, Singapore); Xiaowu Zhao (ZTE, P.R. China)
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Rodrigo Steiner (Federal University of Santa Catarina & Software/Hardware Integration Lab, Brazil); Mohammad Reza Akhavan (King's College London, University of London & Institute of Telecommunications - Centre for Telecommunications Research, United Kingdom); Antônio Augusto Fröhlich (Federal University of Santa Catarina, Brazil); Hamid Aghvami (King's College London, United Kingdom)
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Jian Qiao (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada); Jon Mark (University of Waterloo, Canada); Zhiguo Shi (Zhejiang University, Canada); Neda Mohammadzadeh (University of Waterloo, Canada)
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Manli Qian (Institute of Computing Technology, Chinese Academy of Sciences & University of Sydney, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Wei Wei (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Yi Huang (Institute of Computing Technology, China Academy of Sciences, P.R. China); Yuanyuan Wang (Institute of Computing Technology, Chinese Academy of Sciences & University of Chinese Academy of Sciences, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
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Peng Zhang (Peking University, P.R. China); Yuzhuang Miao (Peking University, P.R. China); Yuping Zhao (Peking University, P.R. China)
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Sa Zhang (Beijing University of Posts and Telecommunications, P.R. China); ZhuYan Zhao (Nokia Siemens Networks, P.R. China); Hao Guan (Nokia Siemens Networks, P.R. China); Deshan Miao (Nokia Siemens Networks, P.R. China); Hongwen Yang (Beijing University of Posts and Telecommunications, P.R. China)
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Hsi-Lu Chao (National Chiao Tung University, Taiwan); Chia-Kai Chang (National Chiao Tung University, Taiwan); Chia-lung Liu (National Chung-Hsing University, Taiwan)
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Rajeev Agrawal (Nokia Siemens Networks, USA); Naveen Arulselvan (Nokia Siemens Networks, India); Suresh Kalyanasundaram (Nokia Siemens Networks, India); Balamurali Natarajan (Nokia Siemens Networks, India); Vijay Subramanian (Northwestern University, USA); Hua Xu (Nokia Siemens Networks, India)
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Bosheng Zhou (Queens University Belfast, United Kingdom); Alan Marshall (Queens University Belfast, United Kingdom); Tsung-Han Lee (National Taichung University, Taiwan)
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Pengfei Huang (Shanghai Jiao Tong University, P.R. China); Xudong Wang (Shanghai Jiao Tong University, P.R. China)
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Li Wang (Beijing University of Posts and Telecommunications, P.R. China); Xi Zhang (Texas A&M University, ECE Department, USA); Ma Xin (Beijing University of Posts and Telecommunications, P.R. China); Mei Song (, P.R. China)
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Wei Luo (Peking University, P.R. China); Anpeng Huang (Peking University, P.R. China); LinZhen Xie (Peking University, P.R. China); Tammy Chang (Stanford University, USA)
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Han-Chiang Li (National Taiwan University of Science and Technology, Taiwan); Kate Ching-Ju Lin (Academia Sinica, Taiwan); Kai-Lung Hua (National Taiwan University of Science and Technology, Taiwan); Ge-Ming Chiu (National Taiwan University of Science and Technology, Taiwan)
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Xinxin Liu (University of Florida, USA); Jianlin Guo (Mitsubishi Electronic Research Lab, USA); Ghulam M. Bhatti (MERL, USA); Philip Orlik (Mitsubishi Electric Research Laboratories, USA); Kieran Parsons (Mitsubishi Electric Research Laboratories, USA)
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Fen-Yen Lee (National Cheng Kung University, Taiwan); Sok-Ian Sou (National Cheng Kung University, Taiwan); Phone Lin (National Taiwan University, Taiwan)
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Zhimin Li (Institute of Communication Engineering, P.R. China); Hai Wang (Nanjing Institute of Communications Engineering, P.R. China); Chao Dong (Institute of Communication Engineering, P.R. China); Rui Qian (Institute of Communication Engineering, P.R. China)
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Siew Eng Nai (Institute for Infocomm Research, Singapore); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Mérouane Debbah (Supelec, France); Aiping Huang (Zhejiang University, P.R. China)
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Yu Ma (Beijing University of Posts and Telecommunications, P.R. China); Mugen Peng (Beijing University of posts & Telecommunications, P.R. China); Wenqian Xue (Beijing University of Posts and Telecommunications, P.R. China); Xiaodong Ji (Beijing University of Posts and Telecommunications, P.R. China)
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Sha Hua (Polytechnic Institute of New York University, USA); Xuejun Zhuo (Tsinghua University, P.R. China); Shivendra Panwar (Polytechnic Institute of New York University, USA)
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Liang Liang (University of Electronic Science and Technology of China, P.R. China); Gang Feng (University of Electronic Science and Technology of China, P.R. China); Tingli Mao (University of Electronic Science and Technology of China, P.R. China)
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Hybrid Femtocell Resource Allocation Strategy in Fractional Frequency Reuse

Azwan Mahmud (University of Manchester, United Kingdom); Khairi A. Hamdi (University of Manchester, United Kingdom)
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Liang Huang (Institute of Computing Technology, Chinese Academy of Science, P.R. China); Yiqing Zhou (Chinese Academy of Science, P.R. China); Xue Han (institute of computing Technology Chinese Academy of science, P.R. China); Yuanyuan Wang (Institute of Computing Technology, Chinese Academy of Sciences & University of Chinese Academy of Sciences, P.R. China); Manli Qian (Institute of Computing Technology, Chinese Academy of Sciences & University of Sydney, P.R. China); Jinglin Shi (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)
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Yiyin Wang (Shanghai Jiao Tong University, P.R. China); Marie Shinotsuka (Georgia Institute of Technology, USA); Xiaoli Ma (Georgia Institute of Technology, USA); Meixia Tao (Shanghai Jiao Tong University, P.R. China)
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Ke-Ting Lee (National Chiao Tung University, Taiwan); Po-Hsuan Tseng (National Taipei University of Technology, Taiwan); Chien-Hua Chen (National Chiao Tung University, Taiwan); Kai-Ten Feng (National Chiao Tung University, Taiwan)
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Daniel Widmann (University of Lugano, Switzerland); Katarina Balać (University of Lugano, Switzerland); Antonio V. Taddeo (University of Lugano & Faculty of Informatics, Switzerland); Mauro Prevostini (University of Lugano, Switzerland); Alessandro Puiatti (University of Applied Sciences of Southern Switzerland (SUPSI), Switzerland)
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Genming Ding (Beijing Jiaotong University, P.R. China); Zhenhui Tan (Beijing JiaoTong University, Beijing, P.R. China); Jinbao Zhang (Beijing JiaoTong University, P.R. China); Lingwen Zhang (Beijing Jiaotong University, P.R. China)
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Yuhui Jian (Tongji University, P.R. China); Erwu Liu (Tongji University, P.R. China); Yue Wang (Tongji University, P.R. China); Zhengqing Zhang (Tongji University, P.R. China); Changsheng Lin (Shanghai Institute of Measurement and Testing Technology, P.R. China)
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Nauman Shahid (Lahore University of Management Sciences, Pakistan); Syed Bilal Ali (LUMS School of Science and Engineering (SSE), Pakistan); Kamran Ali (Lahore University of Management Sciences, Pakistan); Muhammad Lodhi (Lahore University of Management Sciences, Pakistan); Ovais Usman (LUMS School of Science and Engineering (SSE), Pakistan); Ijaz Haider Naqvi (LUMS School of Science and Engineering (SSE) & LUMS SSE, Pakistan)
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Pradhumna L Shrestha (University of Nebraska-Lincoln, USA); Michael Hempel (University of Nebraska-Lincoln, USA); Yi Qian (University of Nebraska-Lincoln, USA); Hamid Sharif (University of Nebraska-Lincoln, USA); John Punwani (Department of Transportation, USA); Monique Stewart (Department of Transportation, USA)
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Xinming Zhang (University of Science and Technology of China, P.R. China); Jiuping Jin (University of Science and Technology of China, P.R. China); Fan Yan (University of Science and Technology of China, P.R. China)

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Lúcio Studer Ferreira (INOV - INESC Inovação & Instituto Superior Técnico - Technical University of Lisbon, Portugal); Ramón Agüero (University of Cantabria, Spain); Luisa Caeiro (Escola Superior de Tecnologia de Setúbal - Polytechnic Institute of Setúbal, Portugal); Avi Miron (Technion, Israel); Michael Soellner (Alcatel-Lucent Bell Labs, Germany); Peter Schoo (Fraunhofer Research Institution for Applied and Integrated Security AISEC, Germany); Lucian Suciú (France Télécom R&D, France); Andreas Timm-Giel (Hamburg University of Technology, Germany); Asanga Udugama (University of Bremen, Germany)

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Alexander Oberle (Fraunhofer SIT, Germany); Andre Rein (Fraunhofer SIT, Germany); Nicolai Kuntze (Fraunhofer SIT, Germany); Carsten Rudolph (Fraunhofer SIT, Germany); Janne Paatero (RUAG AG, Switzerland); Andrew Lunn (RUAG AG, Switzerland); Peter Racz (RUAG Schweiz AG, Switzerland)

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Shunrong Jiang (Xidian University, P.R. China); Xiaoyan Zhu (Xidian University, P.R. China); Liangmin Wang (Jiangsu University, P.R. China)

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Seyhan Ucar (Koc University, Turkey); Sinem Coleri Ergen (Koc University & University of California Berkeley, Turkey); Ozgur Ozkasap (Koc University, Turkey)

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Zainab Zaidi (NICTA, United Kingdom)

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Mohammad Aljaafreh (University of Ottawa & School of Electrical Engineering and Computer Science, Canada); Haifa Maamar (SITE, University of Ottawa, Canada); Azzedine Boukerche (University of Ottawa, Canada)

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Bixing Ye (Southeast University & National Mobile Communications Research Lab, P.R. China); Zaichen Zhang (Southeast University, P.R. China)

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Changming Zhang (Tsinghua University, P.R. China); Zhenyu Xiao (Tsinghua University, P.R. China); Bo Gao (Tsinghua University, P.R. China); Li Su (Tsinghua University, P.R. China); Depeng Jin (Tsinghua University, P.R. China)

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Wei Feng (Tsinghua University, P.R. China); Zhenyu Xiao (Tsinghua University, P.R. China); Depeng Jin (Tsinghua University, P.R. China); Lieguang Zeng (Tsinghua University, P.R. China)

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Mohamed Abouelseoud (InterDigital Communications Corp., USA); Gregg A Charlton (InterDigital Communications Corp., USA)

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Daohua Zhu (National Mobile Communications Research Laboratory, Southeast University, P.R. China); Wei Xu (Southeast University, P.R. China); Hua Zhang (Southeast University, P.R. China); Chunming Zhao (National Mobile Communications Research Laboratory, Southeast University, P.R. China); James C. F. Li (NEC Laboratories China, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
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Wei Fu (Beijing University of Posts and Telecommunications, P.R. China); Ruochen Yao (Beijing Institute of Technology, P.R. China); Feifei Gao (Tsinghua University, P.R. China); James C. F. Li (NEC Laboratories China, P.R. China); Ming Lei (NEC Laboratories China, P.R. China)
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Xiang Li (Xi'an Jiaotong University, P.R. China); Zhenzhen Gao (Xi'an Jiaotong University, P.R. China); Gangming Lv (Xi'an Jiaotong University, P.R. China); Shihua Zhu (Xi'an Jiaotong University, P.R. China)
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An Wang (PLA University of Science and Technology, P.R. China); Yueming Cai (Institute of Communications Engineering, PLAUST, P.R. China); Wendong Yang (Institute of Communications Engineering, P.R. China); Zhao Hou (Institute of Communications Engineering of PLAUST, P.R. China)
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Hang Long (Beijing University of Posts & Telecommunications, P.R. China); Wei Xiang (University of Southern Queensland, Australia); Jing Wang (Beijing University of Posts & Telecommunications, P.R. China); Yueying Zhang (Beijing University of Posts and Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)
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Jianhua Mo (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China); Yuan Liu (Shanghai Jiao Tong University, P.R. China); Bin Xia (Shanghai Jiaotong University, P.R. China); Xiaoli Ma (Georgia Institute of Technology, USA)
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Yanqun Tang (National University of Defense Technology & School of Electronic Science and Engineering, P.R. China); Wei Li (National University of Defense Technology, P.R. China); Dongtang Ma (National University of Defense Technology, P.R. China); Xiaoying Zhang (National University of Defense Technology, P.R. China); Ji-Bo Wei (National University of Defense Technology, P.R. China)
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Zhenzhen Gao (Xi'an Jiaotong University, P.R. China); Xuwen Liao (Xi'an Jiaotong University, P.R. China); Xiaodong Sun (Xi'an Jiaotong University, P.R. China); Shihua Zhu (Xi'an Jiaotong University, P.R. China)
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Giacomo Bacci (University of Pisa & Wireless Systems Engineering and Research (Wiser) Srl, Italy); Luca Sanguinetti (University of Pisa, Italy); Marco Luise (University of Pisa & WISER srl, Italy); H. Vincent Poor (Princeton University, USA)
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Samuli Tiirio (Tokyo University of Agriculture and Technology, Japan); Kenta Umabayashi (Tokyo University of Agriculture and Technology, Japan); Yasuo Suzuki (Tokyo University of Agriculture and Technology, Japan)
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Shimin Gong (Nanyang Technological University, Singapore); Ping Wang (Nanyang Technological University, Singapore); Yongkang Liu (University of Waterloo, Canada); Weihua Zhuang (University of Waterloo, Canada)
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Yanhui Ma (Beijing University of Posts and Telecommunications, P.R. China); Tiejun Lv (Beijing University of Posts and Telecommunications, P.R. China)
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Jingya Li (Chalmers University of Technology, Sweden); Behrooz Makki (Chalmers University of Technology, Sweden); Tommy Svensson (Chalmers University of Technology, Sweden); Thomas Eriksson (Chalmers University of Technology, Sweden)
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Zhikun Xu (Beihang University, P.R. China); Chenyang Yang (Beihang University, P.R. China); Geoffrey Li (Georgia Tech, USA); Yalin Liu (Huawei Technologies Co., Ltd, P.R. China); Shugong Xu (Huawei, P.R. China)
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Qing Bai (Technische Universität München, Germany); Rana Ali Amjad (Technische Universität München, Germany); Josef A. Nossek (Technische Universität München, Germany)
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Maria Gregori (CTTC, Spain); Antonio Pascual-Iserte (Universitat Politècnica de Catalunya, Spain); Miquel Payaró (CTTC, Spain)
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Xuegui Song (University of British Columbia, Canada); Fan Yang (University of British Columbia, Canada); Julian Cheng (University of British Columbia, Canada)
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Asanka Nuwanpriya (University of South Australia, Australia); Jian (Andrew) Zhang (CSIRO ICT Centre, Australia); Alex Grant (University of South Australia, Australia); Siu-Wai Ho (University of South Australia, Australia); Lin Luo (University of South Australia, Australia)
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Mingxuan Zhang (Southeast University & National Mobile Communications Research Laboratory, P.R. China); Zaichen Zhang (Southeast University, P.R. China)
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Lajos Hanzo (University of Southampton, United Kingdom); Robert G Maunder (University of Southampton, United Kingdom); Isaac Perez-Andrade (University of Southampton, United Kingdom); Xin Zuo (University of Southampton, United Kingdom); Bashir Al-Hashimi (University of Southampton, United Kingdom)
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Li Chen (Sun Yat-sen University, P.R. China)
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Rongchun Li (National University of Defense Technology, P.R. China); Yong Dou (National University of Defense Technology (NUDT), P.R. China); Yu Li (National University of Defense Technology, P.R. China); Shi Wang (Changsha Military Delegate Bureau, P.R. China)
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Lang Xie (Norwegian University of Science and Technology, Norway); Poul E. Heegaard (Norwegian University of Science and Technology & NTNU, Norway); Yuming Jiang (Norwegian University of Science and Technology (NTNU), Norway)
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Boris Malinowsky (Forschungszentrum Telekommunikation Wien, Austria); Jesper Grønbæk (Forschungszentrum Telekommunikation Wien, Austria); Hans-Peter Schwefel (Forschungszentrum Telekommunikation Wien & Aalborg University, Austria)
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Yang Xia (Nanyang Technological University, Singapore); Zuebair Bong (Nanyang Technological University, Singapore); Suguru Ishikawa (Osaka University, Japan); Chai Kiat Yeo (Nanyang Technological University, Singapore); Yuanyuan Mao (Nanyang Technological University, Singapore)
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Zhuo Chen (Chongqing University of Technology, P.R. China); Gang Feng (University of Electronic Science and Technology of China, P.R. China); Yi Lu (University of Electronic Science and Technology of China, P.R. China)
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Chih-Wei Yi (National Chiao Tung University, Taiwan); Yu-Chee Tseng (National Chiao-Tung University, Taiwan); Juyi Lin (National Chiao Tung University, Taiwan)
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Zhenni Pan (Waseda University, Japan); Shigeru Shimamoto (Waseda University & Graduate School of Global Information and Telecommunication Studies, Japan)
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Yaxiong Zhao (Amazon.com Inc, USA); Jie Wu (Temple University, USA); Cong Liu (Sun Yat-sen University, P.R. China); Mingming Lu (Shenzhen Institutes of Advanced Technology & Central South University, P.R. China)
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May El Barachi (Zayed University, UAE); Sleiman Rabah (Concordia University, Canada); Nadjia Kara (École de Technologie Supérieure, Canada); Rachida Dssouli (Concordia University, Canada); Joey Paquet (Concordia University, Canada)
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Dinh-Thuy Phan-Huy (Orange-France Telecom, France); Thierry Sarrebourg (Orange-France Telecom, France); Azeddine Gati (Orange Labs, France); Joe Wiart (Orange-France Telecom, France); Maryline Héland (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France)
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Lin Ma (Harbin Institute of Technology, P.R. China); Xinru Ma (Harbin Institute of Technology, P.R. China); Xi Liu (Harbin Institute of Technology, P.R. China); Yubin Xu (Harbin Institute of Technology, P.R. China)
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Cong Liu (Huazhong University of Science & Technology, P.R. China); Li Yu (Huazhong University of Science & Technology, P.R. China); Yuan Gao (Huazhong University of Science & Technology, P.R. China); Zuhao Liu (Huazhong University of Science & Technology, P.R. China)
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Min-Cheng Chan (National Chiao Tung University, Taiwan); Chien-Chao Tseng (National Chiao-Tung University, Taiwan); Li-Hsing Yen (National University of Kaohsiung, Taiwan)
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Hyun-Woo Oh (Electronics & Telecommunications Research Institute, Korea)
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