2013 2nd IEEE/CIC International Conference on Communications in China (ICCC) Program

Tuesday, 13 August 10:50 - 12:30

CIT01: Information Theory
(Tuesday, 13 August | 10:50 - 12:30 | Room: B)

Slice Error Detection and Correction Decoder for H.264/AVC Video Sequences (Invited Paper)
Kai Yen (Institute for Infocomm Research, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore)

An Extended Fano's Inequality for the Finite Blocklength Coding
Yunquan Dong (Tsinghua University, P.R. China); Pingyi Fan (Tsinghua University, P.R. China)

Construction of LT Codes with Unequal Erasure Protection for Rateless Data Transmission
Fa Cun Zhang (Xi'an University of Technology, P.R. China); Xi Ying Duan (Xi'an University of Technology, P.R. China); Meng Dong (Unit92060, P.R. China)

Sparse Representation of Image Using Easy Path Wavelet Transform
Syed Akbar Raza Naqvi (National University of Science and Technology-Military College of Signals, Pakistan)

A Multicast Routing Protocol for Network Coding
Gaifan Li (University of Science and Technology of China, P.R. China); Yinlong Xu (University of Science and Technology of China, P.R. China); Shuai Li (University of Science and Technology of China, P.R. China); Dexin Cui (University of Science & Technology of China, P.R. China)
SPC01: Performance Analysis and Evaluation
(Tuesday, 13 August | 10:50 - 12:30 | Room: C)

Blind Interference Alignment with Diversity in Two-User Interference Channel (Invited Paper)
Yi Lu (The University of New South Wales, Australia); Wei Zhang (The University of New South Wales, Australia); Khaled B. Letaief (The Hong Kong University of Science and Technology, Hong Kong)

Outage Capacity Analysis of LTE-A Transmission Techniques
Le Chen (National Mobile Communications Research Lab., Southeast University, P.R. China); Pengcheng Zhu (National Mobile Communications Research Lab., P.R. China); Shuowen Zhang (National Mobile Communications Research Lab., Southeast University, P.R. China); Xiaoju You (National Mobile communication Research Lab., Southeast University, P.R. China)

On the Performance of Heterogeneous Wireless Networks with Heavy Tail Traffic
Juan Wen (Xidian University, P.R. China); Min Sheng (Xidian University, P.R. China); Yan Zhang (Xidian University, P.R. China)

Analysis and Modeling of Channel Reciprocity Errors based on a Experimental OFDM/TDD Coordinated Multi-point Transmission System
Zheqi Gu (University of Electronic Science and Technology of China, P.R. China); Ning Wei (University of Electronic Science and Technology of China, P.R. China); Zhongpei Zhang (University of Electronic Science and Technology of China, P.R. China)

Performance Analysis of Cognitive Relay Networks Under Both Average and Peak Interference Power Constraints
Haiyan Huang (XiDian University, P.R. China); JiangBo Si (Xi’dian, P.R. China); Zan Li (Xidian University, P.R. China); Benjian Hao (Xidian University, P.R. China); Lei Pan (Xidian University, P.R. China)

WCS01: MIMO Networks
(Tuesday, 13 August | 10:50 - 12:30 | Room: E)

Electromagnetic Lens-focusing Antenna Enabled Massive MIMO (Invited Paper)
Yong Zeng (Nanyang Technological University, Singapore); Rui Zhang (National University of Singapore, Singapore); Zhi Ning Chen (National University of Singapore & Institute for Infocomm Research, Singapore)

User Pairing Scheme with Maximum Stability Region under QoS Constraints for Uplink Virtual MIMO Networks
Chunliang Wu (University of Science and Technology of China, P.R. China); Li Chen (University of Science and Technology of China, P.R. China); Guo Wei (University of Science & Tech. of China, P.R. China)

DF-AF Selection MIMO Relaying with Orthogonal Space-Time Block Codes in Wireless Networks
Tian Zhang (Tsinghua University & Shandong University, P.R. China); Wei Chen (Tsinghua University, P.R. China); Wei Zhang (The University of New South Wales,
Effect of Antenna Circuit Distribution on the Characteristics of Hexapolarized MIMO System over Free Space and Ground Reflected Channel
Longchu Liu (Communication University Of China, P.R. China); Dazhi Piao (Communication University of China, P.R. China)

Alamouti Scheme based Affine Projection Decoder in a Multiuser MIMO Downlink System
Haiquan Wang (Hangzhou Dianzi University, P.R. China); Luping Ma (Hangzhou Dianzi University, P.R. China); Linlin Hou (Hangzhou Dianzi University, P.R. China); Lei Shen (Hangzhou Dianzi University, P.R. China)

WNA01: Wireless Sensor Networks
(Tuesday, 13 August | 10:50 - 12:30 | Room: F)

CMESR: a Hybrid Approach for Data Collection and Sensor Redeployment Using Mobile Element in WSNs
Jiaxing Xiao (Northwestern Polytechnical University, P.R. China); Ruonan Zhang (Northwestern Polytechnical University, P.R. China); Jianping Pan (University of Victoria, Canada); Yi Jiang (Northwestern Polytechnical University & School of Electronics and Information, P.R. China)

Hierarchical Spatial Clustering in Multi-hop Wireless Sensor Networks
Zhidan Liu (Zhejiang University, P.R. China); Wei Xing (Zhejiang University, P.R. China); Bo Zeng (Zhejiang University, P.R. China); Yongchao Wang (Zhejiang University, P.R. China); Dongming Lu (Zhejiang University, P.R. China)

A New Variant of Sum-Product Algorithm for Sensor Self-Localization in Wireless Networks
Wei Li (Nanjing University of Posts and Telecommunications, P.R. China); Zhen Yang (Nanjing University of Posts&Telecommunications, P.R. China); Haifeng Hu (Nanjing University of Posts and Telecommunications, P.R. China)

An Energy-efficient TDMA Scheduling for Data Collection in Wireless Sensor Networks
Bo Zeng (Zhejiang University, P.R. China); Yabo Dong (Zhejiang University, P.R. China); Jie He (Zhejiang University, P.R. China); Dongming Lu (Zhejiang University, P.R. China)

Node Buffer Size in Intermittently Connected Wireless Networks with Infrastructure Support
Chengyu Lin (Naval Aeronautical Engineering Institute Qingdao Branch, P.R. China); Tuo Yu (Shanghai Jiaotong University, P.R. China); Riheng Jia (Shanghai Jiaotong University, P.R. China); Feng Yang (Shanghai Jiaotong University, P.R. China); Xiaoying Gan (Shanghai Jiao Tong University & Calit2, University of California, San Diego, P.R. China)

FMI03P: Power Management
(Tuesday, 13 August | 10:50 - 12:30 | Room: Lobby)

Application Research of Next Generation Internet Technology on Intelligent Power utilization System
Jinghong Guo (Theory Research, P.R. China); Xiande Bu (Electric Power Research Institute, P.R. China)
Comprehensive Performance Analysis of Hierarchical Power Management in Data Centers
Jianxiang Li (Tsinghua University, P.R. China)

Dynamic Fair Scheduling for Inter-cell Interference Coordination in 4G Cellular Networks
Wen Guo (Hefei University of Technology, P.R. China); Xiumin Wang (Hefei University of Technology, P.R. China); Jie Li (Hefei University of Technology, P.R. China); Lusheng Wang (Hefei University of Technology, P.R. China)

QRS03P: Wireless Network Security
(Tuesday, 13 August | 10:50 - 12:30 | Room: Lobby)

Effective Eavesdropping in the Artificial Noise Aided Security Scheme
Feilong Wu (Xi'an Jiaotong University, P.R. China); Wenjie Wang (Xi'an Jiaotong University, P.R. China); Bobin Yao (Xi'an Jiaotong University, P.R. China); Qinye Yin (Xi'an Jiaotong University, P.R. China)

Eavesdropper Tolerance Capability Study in Two-Hop Cooperative Wireless Networks
Yuanyu Zhang (Xidian University, P.R. China); Yulong Shen (Xidian University & Wayne State University, USA); Xiaohong Jiang (Future University-Hakodate, Japan)

Anonymous Deduplication of Encrypted Data with Proof of Ownership in Cloud Storage
Xuexue Jin (USTC, P.R. China); Lingbo Wei (Shanghai Jiao Tong University, P.R. China); Mengke Yu (USTC, P.R. China); Nenghai Yu (University of Science and Technology of China, P.R. China); Jinyuan (Stella) Sun (University of Tennessee, USA)

WNA05P: Transmissions Schemes
(Tuesday, 13 August | 10:50 - 12:30 | Room: Lobby)

Dynamic Joint Transmission for Downlink Scheduling Scheme in Clustered CoMP Cellular
Jia Yu (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Peipei Chen (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Bin Cao (Harbin Institute of Technology Shenzhen Graduate School & University of Waterloo, P.R. China); Yalin Zhang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China)

Two-Hop Relay Algorithm with Packet Redundancy and Erasure Coding in MANETs
Yang Bin (Future University Hakodate, Japan); Juntao Gao (Future University-Hakodate, Japan); Yuezhi Zhou (Tsinghua University, P.R. China); Xiaohong Jiang (Future University-Hakodate, Japan)

A Novel Data Forwarding Scheme in WLANs with Hidden Terminals
Ronghui Hou (Xidian University, P.R. China); Xiaoni Chang (Xidian University, P.R. China); Jiandong Li (Xidian University, P.R. China)

Data Gathering for Network Compressed Coding Enabled Wireless Sensor Networks
WNA06P: Energy Efficiency

(Tuesday, 13 August | 10:50 - 12:30 | Room: Lobby)

Energy and Throughput Tradeoff in Hybrid Cognitive Radio Networks based on POMDP
Yalin Zhang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Yin Xu (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Wei Wang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Peipei Chen (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Bin Cao (Harbin Institute of Technology Shenzhen Graduate School & University of Waterloo, P.R. China)

EESM-based Fingerprint Algorithm for Wi-Fi Indoor Positioning System
Fan Wang (Shanghai Jiao Tong University, P.R. China); Zhengyong Huang (Shanghai Jiao Tong University, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); Xiaohua Tian (Shanghai Jiao Tong University, P.R. China); Xining Wang (Shanghai Jiao Tong University, P.R. China); Jinwei Huang (Shanghai Jiao Tong University, P.R. China)

Mobile Cloud with Smart Offloading System
Wei-Tsung Su (Aletheia University, Taiwan); Kiat Siong Ng (Aletheia University, Taiwan)

A Logic-Route Key Tree based Group Key Management Scheme for Wireless Sensor Networks
Rong Jiang (National University of Defense Technology, P.R. China); Jun Luo (National University of Defense Technology, P.R. China); Xiaoping Wang (National University of Defense Technology, P.R. China)

Tuesday, 13 August 14:00 - 16:00

FMI01: Data Access and Mobile Computing

(Tuesday, 13 August | 14:00 - 16:00 | Room: B)

Asymptotic Analysis on Secrecy Capacity in Large-Scale Wireless Networks (Invited Talk)
Xinbing Wang (Shanghai Jiaotong University, P.R. China)

Statistic Analysis of Data Access Behavior in the Mobile Internet (Invited Paper)
Lihua Wu (Wuhan University, P.R. China); Xin Qian (Microsoft Corporation, USA); Yuan Li (Wuhan University, P.R. China); Chen Zhou (Wuhan University, P.R. China); Jiang Hao (Wuhan University, P.R. China)

A Multi-Path based In-network Content Caching Scheme
Deepak Bhatia (University of Surrey, United Kingdom); Ning Wang (University of Surrey, United Kingdom); Michael P. Howarth (University of Surrey, United Kingdom)

Privacy-Preserving Computation for Location-based Information Survey via Mobile Cloud Computing
Hao Zhang (University of Science and Technology of China, P.R. China); Yonggang Wen (Nanyang Technological University, Singapore); Nenghai Yu (University of Science and Technology of China, P.R. China); Xinwen Zhang (Huawei, USA)
Power Consumption of Mobile Video Streaming under Adverse Network Conditions
Junlun Ma (Sun Yat-Sen University, P.R. China); Xiang Deng (Sun Yat-Sen University, P.R. China); Yong Liu (Polytechnic Institute of NYU, USA); Di Wu (Sun Yat-Sen University, P.R. China)

Spectral-Efficiency of Uplink Cellular Networks with Distributed Base-Station Detection and Cooperation
Xiaojie Ju (Beihang University & University of Southampton, P.R. China); Youguang Zhang (Beihang University, P.R. China); Lie-Liang Yang (University of Southampton, United Kingdom)

OCS01: Optical Wireless Network
(Tuesday, 13 August | 14:00 - 16:00 | Room: D)

Modulation and detection techniques for long haul and short reach optical transmission systems (Invited Talk)
Lu Chao (Hong Kong Polytechnic University, Hong Kong, China)

A Novel Analytical Framework for Modeling Nonlinear Distortions in OFDM-based Optical Wireless Communication (Invited Paper)
Dobroslav A. Tsonev (University of Edinburgh, United Kingdom); Sinan Sinanović (University of Edinburgh, United Kingdom); Harald Haas (The University of Edinburgh, United Kingdom)

Average BER Analysis of Multihop FSO Systems over Strong Turbulence and Misalignment Fading Channels
Ngoc Dang (Posts and Telecommunications Institute of Technology, Vietnam); Hien Pham (Posts and Telecommunications Institute of Technology, Vietnam); Anh T. Pham (The University of Aizu, Japan)

An Efficient Split-Step Optical Fiber Simulation Package with Global Simulation Accuracy Control
Qun Zhang (Minnesota State University, Mankato & Oclaro Inc., USA); Sujit Shrestha (Minnesota State University, Mankato, USA); Rifath Rashid (Minnesota State University, Mankato, USA); Santoshreddy Karri (Minnesota State University Mankato, USA); Muhammad Khaliq (Minnesota State University, Mankato, USA)

Performance Analysis of Multihop FSO Systems Using APD Receivers over Log-Normal Channels
Thanh Pham (University of Aizu & Computer Communications Lab., Japan); Truong Cong Thang (The University of Aizu, Japan); Anh T. Pham (The University of Aizu, Japan)

Home Circuit Grouping in LOBS-HC Ring Networks: ILP and Heuristic Approaches
Jingcong Li (Minzu University of China, P.R. China); Huilin Zou (Minzu University of China, P.R. China); Wan Tang (South-Central University for Nationalities, P.R. China); Xiujiang Gao (University at Buffalo, USA); Chunming Qiao (State University of New York at Buffalo, USA)

QRS01: Privacy-preserving and Network Performance
(Tuesday, 13 August | 14:00 - 16:00 | Room: C)

Fine-grained Privacy-preserving Reputation System for Online Social Networks
(Invited Paper)
Linke Guo (University of Florida, USA); Yuguang Fang (University of Florida, USA);
Lingbo Wei (Shanghai Jiao Tong University, P.R. China)

PARK: A Privacy-preserving Aggregation Scheme with Adaptive Key Management for Smart Grid
Kuan Zhang (University of Waterloo, Canada); Rongxing Lu (Nanyang Technological University, Singapore); Xiaohui Liang (University of Waterloo, Canada); Jian Qiao (University of Waterloo, Canada); Sherman Shen (University of Waterloo, Canada)

SaHaD: A Fine-Grained In-network Latency Measurement for Datacenter Network
Ziwen Zhang (National University of Defense Technology, P.R. China); Lv GaoFeng (National University of Defense Technology, P.R. China); Sun Zhi-gang (National University of Defense Technology, P.R. China); Lu Xicheng (National University of Defense Technology, P.R. China)

A Unified Cooperative Radio Resource Management Game
Chungang Yang (Xidian University, P.R. China)

Simulation on Performance of Forward Link in Simulcast PDT
Daying Quan (Eastern Communications Company Limited, P.R. China); Shaofeng Xie (Eastern Communications Company Limited, P.R. China); Zongjun Zhang (Eastern Communications Company Limited, P.R. China); Kefeng Liao (Eastern Communications Company Limited, P.R. China)

CIT04P: Wireless Network
(Tuesday, 13 August | 14:00 - 16:00 | Room: Lobby)

A Novel Memory Efficient LDPC decoding algorithm and Implementation
Xiaobo Jiang (South China University of Technology, P.R. China)

An Approach to Mitigate the Quantization Distortion of the Quantized OFDM Receiver
Zhiming Li (University of Science and Technology of China, P.R. China); Ying Yang (University of Science and Technology of China, P.R. China); Weidong Wang (University of Science and Technology of China, P.R. China)

Performance Analysis of Small Cells Using Stochastic Geometry Approach in Nakagami Fading Channels
Jiajia Chen (National Chiao Tung University, Taiwan); Li-Chun Wang (National Chiao Tung University, Taiwan)

Performance Enhancement Of Pragmatic General Multicast Protocol Using a Local Loss Recovery Strategy
Tunisha Shome (Indira Gandhi Institute of Technology, India); Sunayana Gupta (Guru Gobind Singh Indraprastha University, India)

SPC05P: Advanced Signal Processing for Communications
(Tuesday, 13 August | 14:00 - 16:00 | Room: Lobby)

Joint Channel Estimation and Pre-Equalization for Monobit Transmission System
Pengfei Li (University of Science and Technology of China, P.R. China); Zhiyong Wang (University
Spatial Modulation Detection Based on Projection Decomposition  
Jianping Zheng (Xidian University, P.R. China)

Analysis of Interference-aware Receivers in Heterogeneous LTE Networks  
Stanislaus Iwelski (University of Duisburg-Essen, Germany); Zijian Bai (University of Duisburg-Essen, Germany); Guido Bruck (University of Duisburg-Essen, Germany); Peter Jung (Universität Duisburg-Essen, Germany); Biljana Badic (Intel, Germany); Tobias Scholand (Intel, Germany); Rajarajan Balraj (Intel, Germany)

Joint UWB TOA and AOA Estimation Under 1-bit Quantization Resolution  
Si Zhu (University of Science and Technology of China, P.R. China); Fei Sun (University of Science and Technology of China, P.R. China); XiaoHui Chen (University of Science and Technology of China, P.R. China)

A Modified Algorithm for Joint Frequency Offset and Channel Estimation in OFDM Systems  
Shi-Hao Chiu (National Central University, Taiwan); Kuo-Ching Fu (National Central University, Taiwan); Yung-Fang Chen (National Central University, Taiwan)

SPC06P: LTE and advanced systems  
(Tuesday, 13 August | 14:00 - 16:00 | Room: Lobby)

Downlink Beamforming for Weighted Sum-Rate Maximization  
Xin Wang (Fudan University, P.R. China); Zhaoquan Li (Florida Atlantic University, USA)

Maximum Power Interference Alignment Scheme for Less Overhead in MIMO Interference Channel  
Zheng-yu Zhu (Zhengzhou University, P.R. China); Zhong-yong Wang (Zhengzhou University, P.R. China); Xiang-chuan Gao (Beijing University of Posts and Telecommunications, P.R. China); Wang Wei (Zheng Zhou University, P.R. China); Zhang Yuanyuan (Zheng Zhou University, P.R. China)

Adaptive Power Allocation for Decode-and-Forward OFDM Transmission with Multi- Hop Relaying  
Jun Wang (University of Science and Technology Beijing (USTB), P.R. China); Yang Li (USTB, P.R. China); Bin Zhong (University of Science and Technology Beijing (USTB),P.R. China); Zhongshahn Zhang (University of Science and Technology Beijing (USTB), P.R. China); Keping Long (University of Science and Technology Beijing, P.R. China)

Analysis Framework for Cooperative Multi-Relaying over In-door Composite Fading Environments  
John F. An (National Taiwan Ocean University, Taiwan); Shih-Hsin Huang (MSEE, Taiwan)

Energy-efficiency Maximization for OFDMA Networks with Total Power Constraint  
Tao Wang (Shanghai University, P.R. China)
FMI02: Heterogeneous wireless Networks

(Tuesday, 13 August | 16:20 - 18:20 | Room: B)

**Mobile Service Access Network (MSAN) over future Information-centric Architecture (Invited Talk)**
Guoqiang Wang (Huawei Tech, P.R. China)

**Mobile Behaviometrics: Models and Applications (Invited Paper)**
Jiang Zhu (Carnegie Mellon University, USA); Hao Hu (Cisco Systems, USA); Sky Hu (Carnegie Mellon University, USA); Pang Wu (Carnegie Mellon University, USA); Joy Zhang (Carnegie mellon University, USA)

**Downlink Interference Minimization in Cognitive LTE-Femtocell Networks**
Xin Tao (Zhejiang University, P.R. China); Zhifeng Zhao (Zhejiang University, P.R. China); Rongpang Li (Zhejiang University, P.R. China); Jacques Palicot (IETR/Supélec, France); Honggang Zhang (Université Européenne de Bretagne (UEB) and Supelec & Zhejiang University, France)

**Interference Forwarding for D2D based Heterogeneous Cellular Networks**
Seong Kyu Choi (Sungkyunkwan University, Korea); Woojin Kim (SungKyungKwan University, Korea); Hae Sol Lee (SungKyungKwan University, Korea); Dong In Kim (Sungkyunkwan University (SKKU), Korea)

**On the Position-based Resource-sharing for Device-to-Device Communications Underlaying Cellular Networks**
Haibo Wang (Beijing Jiaotong University, P.R. China)

**Cooperative Mobility Load Balancing in Relay Cellular Networks**
 Lexi Xu (Queen Mary, University of London, United Kingdom); Yue Chen (Queen Mary University of London, United Kingdom); Kok Keong (Michael) Chai (Queen Mary, University of London, United Kingdom); Yuting Luan (Shenyang Railway Survey & Design Institute, P.R. China); Dantong Liu (Queen Mary University of London, United Kingdom)

OCS02: Optical Network

(Tuesday, 13 August | 16:20 - 18:20 | Room: D)

**Microwave photonic technologies for broadband satellite communications (Invited Talk)**
Pan Shi Long (Nanjing University of Aeronautics and Astronautics, P.R. China)

**Single Frequency Tunable Fiber Lasers for Optical Communications (Invited Paper)**
Shien-Kuei Peter Liaw (National Taiwan University of Science and Technology, Taiwan); Hsiang Wang (National Taiwan University of Science and Technology, Taiwan); Hai-Yin Hsu (National Taiwan University of Science and Technology, Taiwan); Nan-Kuang Chen (National United University, Taiwan); Chow-Shing Shin (National Taiwan University, Taiwan)

**Traffic Partition Grooming in the Mixed Granularity and Multi-domain Optical Networks**
Weigang Hou (Northeastern University, P.R. China); Yue Zong (Northeastern University, P.R. China); Lei Guo (Northeastern University, P.R. China)
Architecture, performance and cost analysis of an optical packet switch with input concentrators
Shuna Yang (ITEM, Norwegian University of Science and Technology, Norway); Norvald Stol (Norwegian University of Science and Technology, Norway)

1-Gb/s Multimedia Service Upstream Transmission in Real-Time DSP-Based OFDM-PON
Yaojun Qiao (Beijing University of Posts and Telecommunications, P.R. China); Ji Zhou (Beijing University of Posts and Telecommunications, P.R. China); Lei Wang (Beijing University of Posts and Telecommunications, P.R. China); Ji Yuefeng (Beijing University of Posts and Telecommunications, P.R. China)

Pump Reflector Based Remote Pumped Bidirectional EDFA for WDM PON Transport
Shih-Syuan Hong (National Taiwan University of Science and Technology, Taiwan); Yi-Lin Yu (National Taiwan University of Science and Technology, Taiwan); Shien-Kuei Peter Liaw (National Taiwan University of Science and Technology, Taiwan); Chow-Shing Shin (National Taiwan University, Taiwan)

QRS02: Models and Algorithms
(Tuesday, 13 August | 16:20 - 18:20 | Room: C)

Optimal Latency Balancing Algorithm for Multiple Portal in Wireless Mesh Networks (Invited Paper)
Azman Osman Lim (Japan Advanced Institute of Science and Technology (JAIST) & School of Information Science, Japan); Zuan Chen (Japan Advanced Institute of Science and Technology (JAIST), Japan); Yasuo Tan (JAIST, Japan)

A Compressive Sensing-based Network Traffic Reconstruction Approach via Partial Direct Measurements
Laisen Nie (Northeastern University, P.R. China); Dingde Jiang (Northeastern University, P.R. China); Lei Guo (Northeastern University, P.R. China); Chunping Yao (Northeastern University, P.R. China)

Linear MMSE Transceiver Optimization for General MIMO Wiretap Channels with QoS Constraints
Minyan Pei (National University of Defense Technology, P.R. China); Lei Wang (NAA, P.R. China); Dongtang Ma (National University of Defense Technology, P.R. China)

An Artificial-neural-network-based QoE Estimation Model for Video Streaming over Wireless Networks
Yaqian Kang (Zhejiang University, P.R. China); Huifang Chen (Zhejiang University, P.R. China); Lei Xie (Zhejiang University, P.R. China)

Sangsha Fang (Huazhong University of Science and Technology, P.R. China); Li Yu (Huazhong University of Science & Technology, P.R. China); Jun Zheng (Huazhong University of Science and Technology, P.R. China); Qin Zhu (Huazhong University of Science and Technology, P.R. China)

OCS03P: Optical Switching Network
(Tuesday, 13 August | 16:20 - 18:20 | Room: Lobby)
Performance Analysis of None-line-of-sight Ultraviolet Communications with Multi- User Interference
Xingjian Jiang (Beijing University of Posts and Telecommunications, P.R. China); Pengfei Luo (Beijing University of Posts and Telecommunications, P.R. China); Min Zhang (Beijing University of Posts and Telecommunications, P.R. China)

Scalable Data Center Network With Distributed Placement of Component Sets in Optical Networks
Jie Xiao (Tian Jin University, P.R. China); Bin Wu (Tianjin University, P.R. China); Xiaohong Jiang (Future University-Hakodate, Japan); Achille Pattavina (Politecnico di Milano, Italy); Hong Wen (University of Waterloo & UESTC, Canada); Lei Zhang (Tianjin University, P.R. China)

An Analytical Approach to Chaotic Behavior of TCP in OBS Networks
He Li (Dalian University of Technology, P.R. China); Hongxi Yin (Dalian University of Technology, P.R. China)

**WCS05P: Relay Communications**
(Tuesday, 13 August | 16:20 - 18:20 | Room: Lobby)

Opportunistic Nonorthogonal Cooperative Communications Through Decode-and- Forward Relaying
Tianfu Guan (Sun Yat-sen University, P.R. China); Li Chen (Sun Yat-sen University, P.R. China)

Joint Energy Saving Resource Allocation and User Scheduling in OFDMA Relay Networks
Bo Huang (Southwest Jiaotong University, P.R. China); Xuming Fang (Southwest Jiaotong University, P.R. China); Yu Chen (Southwest Jiaotong University, P.R. China)

Joint Channel-Physical Layer Network Coding in Multi-Way Wireless Relay Systems
Nuwan Balasuriya (University of Moratuwa, Sri Lanka); Chandika B. Wavegedara (University of Moratuwa, Sri Lanka)

A Low Complex Energy Saving Access Algorithm Based on Base Station Sleep Mode
Chao Meng (Southeast University & National Mobile Communication Research Laboratory, P.R. China); Li Xin (SEU, P.R. China); Xiaowen Lu (Southeast University, P.R. China); Tian Liang (Southeast University, P.R. China); Yanxiang Jiang (Southeast University, P.R. China); Wei Heng (Southeast University, P.R. China)

Energy Efficient Resource Allocation in LTE-A
Yu Ye (University of Electronic Science and Technology of China, P.R. China); Hong Wen (University of Waterloo & UESTC, Canada); Zhuo Yong Ning (University of Electronic Science and Technology of China, P.R. China); Shizhong Xu (University of electronic science and Technology, P.R. China); Bin Wu (Tianjin University, P.R. China)

**WCS06P: Network Algorithm**
(Tuesday, 13 August | 16:20 - 18:20 | Room: Lobby)

Subcarrier-Allocation in Downlink Multicarrier DS-CDMA Systems
Jia Shi (University of Southampton, United Kingdom); Lie-Liang Yang (University of Southampton, United Kingdom)
A Robust Multimode Transmission Strategy for PU2RC with Quantized CQI Using Hierarchical Codebook
Lei Lv (University of Electronic Science and Technology of China, P.R. China); Zhongpei Zhang (University of Electronic Science and Technology of China, P.R. China)

Diversity of MRC Frequency Domain Equalizer for Single Carrier UWB Block Transmission with Direct Sequence Spreading
Xiaoaya Zuo (Northwestern Polytechnical University, P.R. China); Ding Wang (Northwestern Polytechnical University, P.R. China)

Secure Transmission based on Ergodic Fading Channel Uncertainty
Bin Yang (Xi'an Jiaotong University, P.R. China); Wang Wenjie (Xi'an Jiaotong University, P.R. China); Hui-Ming Wang (Xi'an Jiaotong University, P.R. China); Qinye Yin (Xi'an Jiaotong University, P.R. China)

Optimal Monobit Digital Receiver for QPSK Modulation with Phase Rotation
Zhiyong Wang (University of Science and Technology of China, P.R. China); Huarui Yin (University of Science and Technology of China, P.R. China); Guo Wei (University of Sci. & Tech. of China, P.R. China)

Wednesday, 14 August 08:30 - 10:30

SPC02: Channel Estimation

(Wednesday, 14 August | 08:30 - 10:30 | Room: C)

Transmit Optimization with Improper Gaussian Signaling in Multiuser Interference Channels (Invited Talk)
Rui Zhang (National University of Singapore, Singapore)

Cooperative Spectrum Sensing With Adaptive Energy Threshold Control and Efficient Data Fusion
Xiang Ling (University of Electronic Science and Technology of China, P.R. China); Hong Wen (University of Waterloo & UESTC, Canada); Bin Wu (Tianjin University, P.R. China); Shizhong Xu (University of electronic science and Technology, P.R. China); Lili Pan (University of Electronic Science and Technology of China, P.R. China); Zhi Qiang Bao (University of Electronic Science and Technology of China, P.R. China)

Adaptive Sparse Channel Estimation Using Re-Weighted Zero-Attracting Normalized Least Mean Fourth
Guan Gui (Tohoku University, Japan); Abolfazl Mehbodniya (Tohoku University, Japan); Fumiyuki Adachi (Tohoku University, Japan)

Compressed Channel Estimation for MIMO Amplify-and-Forward Relay Networks
Aihua Zhang (Zhengzhou University, P.R. China); Guan Gui (Tohoku University, Japan); Shouyi Yang (Mie University, Japan)

On the Energy Consumption of M-PSK Modulation Schemes under Fading Channels
Nan Wu (Dalian Maritime University, P.R. China); Xudong Wang (Dalian Maritime University, P.R. China); Hao Dai (Dalian Maritime University, P.R. China); HongJi Zhao (Dalian Maritime University, P.R. China)
Optimal Training Symbols for Channel Estimation in Constant-Envelope OFDM
Tsung-Wei Wu (National Taiwan University, Taiwan); Yu-Chieh Cheng (National Taiwan University, Taiwan); Char-Dir Chung (Communication Society, Taiwan)

WCS02: Heterogeneous Networks
(Wednesday, 14 August | 08:30 - 10:30 | Room: D)

An Interference Alignment Based Channel Independent Precoding for MIMO-OFDM Systems (Invited Talk)
Xiang-Gen Xia (University of Delaware, Newark, DE, USA and Chonbuk National University, Jeonju, South Korea)

Beamforming Design for Multi-Pair Two-Way Relaying Systems via Monotonic Program
Zhaoxi Fang (Zhejiang Wannli University, P.R. China); Xiaojun Yuan (The Chinese University of Hong Kong, Hong Kong); Xin Wang (Fudan University, P.R. China)

Hypergraph-Based Frequency Reuse in Dense Femtocell Networks
Jiawei Feng (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China)

A simple Physical Layer Network Coding with fractional delay
Yixin Li (The University of Reading, United Kingdom); Fu-Chun Zheng (The University of Reading, United Kingdom)

Phase Noise Estimation and Compensation in Vector OFDM systems
Ibo Ngebani (Zhejiang University, P.R. China); Yabo Li (Zhejiang University, P.R. China); Xiang-Gen Xia (University of Delaware, USA); Sami Ahmed (Zhejiang University, P.R. China); Minjian Zhao (Zhejiang University, P.R. China)

An Iteration Resource Allocation Method to Maximize Number of Users with QoS Demand in Femtocell Networks
Peng Liu (Xidian University, P.R. China); Jiandong Li (Xidian University, P.R. China); Hongyan Li (Xidian University, P.R. China); Kan Wang (Xidian University, P.R. China)

WNA02: Wireless Networking
(Wednesday, 14 August | 08:30 - 10:30 | Room: F)

The Thinnest Path Problem (Invited Talk)
Qing Zhao (UC Davis, USA)

PPPA: A Practical Privacy-Preserving Aggregation Scheme for Smart Grid Communications
Min Lu (Zhejiang University, P.R. China); Zhiguo Shi (Zhejiang University, P.R. China); Rongxing Lu (Nanyang Technological University, Singapore); Ruixue Sun (Zhejiang University, P.R. China); Shermam Shen (University of Waterloo, Canada)

A Unified End-to-End Security Scheme for Machine-Type Communication in LTE Networks
Chengze Lai (Xidian University, P.R. China); Hui Li (Xidian University, P.R. China); Rongxing Lu (Nanyang Technological University, Singapore); Sherman Shen (University of
Wednesday, 14 August 14:00 – 16:00

CIT02: Channel Coding
(Wednesday, 14 August | 14:00 - 16:00 | Room: B)

A Single Frequency Full-Duplex Radio Relay Station for Frequency Domain Equalization Systems (Invited Paper)
Kazunori Hayashi (Kyoto University, Japan); Megumi Kaneko (Kyoto University, Japan)

Decoding Algorithms for Binary LDPC Coded Gaussian Interference Channels
Shancheng Zhao (Sun Yat-sen University, P.R. China); Xiao Ma (Sun Yat-sen University, P.R. China); Bao-Ming Bai (Xidian University, P.R. China)

A Low Latency, Low-Power LDPC Decoder Design
Zhaohui Cai (Institute for Infocomm Research, Singapore); Chattong Suttinan (Institute for Infocomm Research, Singapore); Khine Thet (Institute for Infocomm Research, Singapore)

Nonbinary LDPC-Coded Differential Modulation with Reduced-Complexity Decoding
Minghua Li (Xidian University, P.R. China); Bao-Ming Bai (Xidian University, P.R. China); Xiao Ma (Sun Yat-sen University, P.R. China)

Effect of the threshold offset on the performance of UEP LDPC codes
Abdul Wakeel (Jacobs University Bremen, Germany); Werner Henkel (Jacobs University Bremen, Germany); Feifei Gao (Tsinghua University, P.R. China)

SPC03: Cooperation and Relaying
(Wednesday, 14 August | 14:00 - 16:00 | Room: C)

Monotonic Optimization Method for General Utility Maximization in Random-access Networks (Invited Paper)
Suzhi Bi (The Chinese University of Hong Kong, Hong Kong); Liping Qian (Zhejiang University of Technology, P.R. China); Ying Jun (Angela) Zhang (The Chinese University of Hong Kong, Hong Kong)
Reputation-based Hierarchically Cooperative Spectrum Sensing
Scheme in Cognitive Radio Networks
Xiong Ni (Yuquan Campus, Zhejiang University, Hangzhou, China, P.R. China); Huifang Chen (Zhejiang University, P.R. China); Lei Xie (Zhejiang University, P.R. China); Kuang Wang (Zhejiang University, P.R. China)

Reputation-Weighted Based Data Fusion Scheme for Uplink Base-Station Cooperation System
Zhe Zhang (School of Information Engineering, Zhengzhou University, P.R. China); Jiankang Zhang (Zhengzhou University, P.R. China); Xiaomin Mu (Zhengzhou University, P.R. China); Xinying Guo (School of Information Engineering, Zhengzhou University, P.R. China)

Power Efficient Spectrum Leasing in Cooperative Cognitive Radios
Lina Song (Xidian University, P.R. China); Wei Liu (Xidian University, P.R. China); Jiandong Li (Xidian University, P.R. China); Qiu Liu (Xidian University, P.R. China); Chuan Li (Xi'an University of Posts and Telecommunications, P.R. China)

Energy-Efficient Joint Relay Selection and Power Control for Reliable Cooperative Communications
Qingxiao Weng (South China University of Technology, P.R. China); Quansheng Guan (South China University of Technology & Chinese University of Hong Kong, P.R. China); Shengming Jiang (Shanghai Maritime University, P.R. China); F. Richard Yu (Carleton University, Canada); Jingliun Shi (South China University of Technology, Korea)

WCS03: Resource Management and Optimization
(Wednesday, 14 August | 14:00 - 16:00 | Room: D)

Uplink Interference Analysis for Two-tier Cellular Networks with Diverse Users under Random Spatial Patterns (Invited Paper)
Wei Bao (University of Toronto, Canada); Ben Liang (University of Toronto, Canada)

Particle Swarm Optimization Based Resource Allocation and Adaptive Modulation in Cooperative OFDMA Systems
Wei Li (National University of Defense Technology, P.R. China); Sheng Zeng (Huazhong University of Science and Technology, P.R. China); Zhiwen Jin (ICTEAM, Université Catholique de Louvain, Belgium); Qin Xin (University of the Faroe Islands, Faroe Islands); Jing Lei (National University of Defense Technology, P.R. China)

Resource Allocation in OFDMA-based Distributed Antenna Systems
Huiling Zhu (University of Kent, United Kingdom); Jiangzhou Wang (University of Kent, United Kingdom)

Asymptotic Upper Bound on the Packet Propagation Speed in WANETs with Directional Antennas
Yin Chen (Future University Hakodate, Japan); Jiajia Liu (Tohoku University, Japan); Xiaohong Jiang (Future University-Hakodate, Japan); Osamu Takahashi (Future University Hakodate, Japan); Norio Shiratori (Tohoku University, Japan)

Finite-State Markov Modeling of Fading Channels: A Field Measurement in High-Speed Railways
Xuan Li (Beijing Jiaotong University, P.R. China); Chao Shen (Beijing Jiaotong University, P.R. China); Ai Bo (Beijing Jiaotong University, P.R. China); Gang Zhu (Electronics and Information College of Beijing Jiaotong University, P.R. China)

WNA03: Cognitive Radio Networks
Cognitive Radio Ad Hoc Networks for Smart Grid Communications: A Disaster Management Approach (Invited Paper)
Hossein Khayami (University of Tehran, Iran); Mohsen Ghassemi (University of Tehran, Iran);
Kamyar Ardekani (University of Tehran, Iran); Behrouz Maham (University of Tehran, Iran);
Walid Saad (University of Miami, USA)

Towards Secure Communications in Cooperative Cognitive Radio Networks
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)

Sensing-Throughput Tradeoff in Joint Spatial-Temporal Sensing Based Cognitive Radio Networks
Peipei Chen (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Jia Yu (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Yalin Zhang (Harbin Institute of Technology Shenzhen Graduate School, P.R. China); Bin Cao (Harbin Institute of Technology Shenzhen Graduate School & University of Waterloo, P.R. China)

Towards Cognitive Device-Free Localization in Wireless Networks
Lifei Wu (Dalian University of Technology, P.R. China); Jie Wang (Dalian University of Technology, P.R. China); Qinghua Gao (Dalian University of Technology, P.R. China); Hongyu Wang (Dalian University of Technology, P.R. China)

Adaptive Cognitive Enhanced Platform For WBAN
Qiang Shen (Shanghai JiaoTong University, P.R. China); Jing Liu (Shanghai Jiao Tong University, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); Zhichao Ma (Shanghai Jiao Tong University, P.R. China); Ming Li (Shanghai JiaoTong University, P.R. China); Chen Chen (Samsung Telecom R&D Center, Korea); Shen Zhichun (Cooperation, P.R. China)

Joint Routing and Scheduling in Fixed Multi-user MIMO Wireless Multi-hop Networks
Md. Forkan Uddin (Bangladesh University of Engineering and Technology, Bangladesh)

CIT03: Communication Theory

Beyond Classical Economics: Exploring the Impact of Social-Psychological Factors on Preference for Speed over Price and Willingness to Pay for a Faster Wireless Service Plan (Invited Paper)
Xiaojing Xu (The University of Tennessee, USA); Chien-fei Chen (Research , USA); Wei Gao (University of Tennessee, USA); Husheng Li (University of Tennessee, USA)

An Integrated Wireless System Using Visible Light (Invited Paper)
Siu-Wai Ho (University of South Australia, Australia); William G. Cowley (University of South Australia, Australia); Khoa Nguyen (University of South Australia, Australia); and Jialong Duan (University of South Australia, Australia)
A rational secret sharing protocol based on Paillier's encryption scheme
Yang Yu (Institute of Information Engineering, P.R. China); Zhanfei Zhou (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

Achievable Spatial Degrees of Freedom for the MIMO Interference Channel with Local CSIT
Shixin Peng (Huazhong University of Science and Technology, P.R. China); Yingzhuang Liu (Huazhong University of Science and Technology, P.R. China); Zhengmin Kong (Wuhan University, P.R. China)

Refunding for Small Cell Networks with Limited-Capacity Backhaul
Yufei Yang (Singapore University of Technology and Design, Singapore); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Lingjie Duan (Singapore University of Technology and Design (SUTD), Singapore)

Weighted Power Discrete Bit-loading in Upstream VDSL
Gao Yao (Ningbo University, P.R. China); Youming Li (Ningbo University, P.R. China); Xiaojing Liu (School of Information Science and Engineering, Ningbo University, P.R. China); Ting Zou (School of Information Science and Engineering, Ningbo University, P.R. China)

SPC04: MIMO system
(Wednesday, 14 August | 16:20 - 18:20 | Room: C)

Diversity Analysis for Generalized MIMO Two-Way X Relay Channel (Invited Paper)
Zhengzheng Xiang (Shanghai Jiao Tong University, P.R. China); Meixia Tao (Shanghai Jiao Tong University, P.R. China)

How Much Feedback is Required for Interference Alignment over K-user Time-Variant Channel?
Yang Zhang (Beijing University of Posts and Telecommunications & China University of Petroleum, P.R. China); Zheng Zhou (Beijing University of Posts and Telecommunications, P.R. China); Bin Li (Beijing University of Posts and Telecommunications & Key Lab of Universal Wireless Communications, MOE, P.R. China); Yuhang Jia (Beijing University of Posts and Telecommunications, P.R. China)

Stable User Pairing in Virtual MIMO Systems: A Game Theoretical Perspective
Ziwei Fu (South China University of Technology, P.R. China); Quansheng Guan (South China University of Technology & Chinese University of Hong Kong, P.R. China); Fei Ji (South China University of Technology, P.R. China); Shengming Jiang (Shanghai Maritime University, P.R. China); Yiqin Lu (South China University of Technology, P.R. China)

Joint Design of Relay Precoding and Artificial Noise with Presence of an Eavesdropper
Ruiqi Xue (Shanghai Jiao Tong University, P.R. China); Meng Zhang (Shanghai Jiao Tong University, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); HanWen Luo (Shanghai Jiao Tong University, P.R. China); Xiaohua Tian (Shanghai Jiaotong University, P.R. China); Li Li (Shanghai Normal University, P.R. China)

Multi-Beam Scheduling for Unmanned Aerial Vehicle Networks
Batu Krishna Chalise (Villanova University, USA); Yimin D. Zhang (Villanova University, USA); Moeness G. Amin (Villanova University, USA)
Particle Swarm Optimization Aided MBER Beamforming Receiver for QAM Systems
Xinying Guo (School of Information Engineering, Zhengzhou University, P.R. China);
Jiankang Zhang (Zhengzhou University, P.R. China); Xiaomin Mu (Zhengzhou University, P.R. China); Zhe Zhang (School of Information Engineering, Zhengzhou University, P.R. China)

WCS04: Spatial Transmission and Processing
(Wednesday, 14 August | 16:20 - 18:20 | Room: D)

An Asymmetric TDD Distributed Massive Antenna System (Invited Paper)
Koichi Adachi (Institute for Infocomm Research (I2R), Singapore); Sumei Sun (Institute for Infocomm Research, Singapore)
Spatial-Temporal Water-Filling Power Allocation in MIMO Systems with Harvested Energy
Congshi Hu (Tsinghua University, P.R. China); Jie Gong (Tsinghua University, P.R. China); Xiaolei Wang (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China)
Numerical Optimization Based Efficient Beam Switching for 60GHz Millimeter-wave Communications
Bin Li (Beijing University of Posts and Telecommunications & Key Lab of Universal Wireless Communications, MOE, P.R. China); Zheng Zhou (Beijing University of Posts and Telecommunications, P.R. China); Haijun Zhang (Beijing University of Posts and Telecommunications, P.R. China); Arumugam Nallanathan (King's College London, United Kingdom)
On the Sum Capacity of Poisson Z-Interference Channels
Lifeng Lai (Worcester Polytechnic Institute, USA); Yingbin Liang (Syracuse University, USA); Shlomo (Shitz) Shamai (The Technion, Israel)
On the Achievable Capacity of Dual-Polarized Antenna Systems in 3D Indoor Scenarios
Fengxiang Wang (Peking University, P.R. China); Xiang Cheng (Peking University, P.R. China); Liuqing Yang (Colorado State University, USA); Bo Yu (Colorado State University, USA); Bingli Jiao (Peking University, P.R. China)
An Energy-Efficient Antenna Muting Scheme for 60GHz Wireless Networks
Hyeokin Seong (Tsinghua University, P.R. China); Xu Zhang (Tsinghua University, P.R. China); Sheng Zhou (Tsinghua University, P.R. China); Zhisheng Niu (Tsinghua University, P.R. China)

WNA04: Wireless Applications
(Wednesday, 14 August | 16:20 - 18:20 | Room: F)

Joint TCP Congestion Control and Wireless-Link Scheduling for Wireless Internet Applications
Xin Wang (Fudan University, P.R. China); Zhaoquan Li (Florida Atlantic University, USA)
Wen-Ching Chung (National Chiao Tung University, Taiwan); Chung-Ju Chang (National Chiao Tung University, Taiwan); Chin-Ya Huang (National Chiao Tung University, Taiwan); Hsin-Ying Teng (National Chiao Tung University, Taiwan)
Scalable Video Coding Based Video Transmission in MRMC Networks: A Cross-Layer Design Perspective
Yan Long (Xidian University, P.R. China); Hongyan Li (Xidian University, P.R. China); Miao Pan (Texas Southern University, USA); Pan Li (Mississippi State University, USA); Jiandong Li (Xidian University, P.R. China)

Performance Evaluation of Scheduling Schemes for H.264/AVC Video Transmission over HSDPA
Qinli Wang (Xi'an Jiaotong University, P.R. China); Guizhong Liu (Xi'an Jiaotong University, P.R. China); Zhao Liu (Xi'an Jiaotong University, P.R. China)

CARD-BS: Consider of Back-off Suspension in CARD for WLAN
Zhichao Ma (Shanghai Jiao Tong University, P.R. China); Jing Liu (Shanghai Jiao Tong University, P.R. China); Hui Yu (Shanghai Jiao Tong University, P.R. China); Qiang Shen (Shanghai JiaoTong University, P.R. China); Ming Li (Shanghai JiaoTong University, P.R. China); Xiaoqing Gan (Shanghai Jiao Tong University & Calit2, University of California, San Diego, P.R. China)

Ant Colony-based Radio Resource Allocation for LTE-A Systems with MIMO and CoMP Transmission
Wen-Ching Chung (National Chiao Tung University, Taiwan); Chien-Yuan Chen (National Chiao Tung University, Taiwan); Chin-Ya Huang (National Chiao Tung University, Taiwan); Chung-Ju Chang (National Chiao Tung University, Taiwan); Frank Ren (Industry Technology and Research Institute, Taiwan)