# **2014 IEEE International Conference on Communication Systems**

(ICCS 2014)

Macau, China 19-21 November 2014



**IEEE Catalog Number: CFP14806-POD ISBN**:

978-1-4799-5833-7

#### **Table of Contents**

#### SS1: M2M/D2D Communications

Feasible D2D Communication Distance in D2D-enabled Cellular Networks Haichuan DING, Shaodan MA, Chengwen XING	1
Radio Resource Management of D2D Communication Qiubin GAO, Rui ZHAO, Wenhong CHEN, Ying PENG, Bin GUO, Shaohui SUN	6
Stackelberg-game Based Distributed Energy-aware Resource Allocation in Device-to-device Communications  Zhenyu ZHOU, Mianxiong DONG, Kaoru OTA, Bo GU, Takuro SATO	11
Resource Sharing for Device-to-device Communications Underlaying Full-duplex Cellular Networks Tinghan YANG, Rongqing ZHANG, Xiang CHENG, Liuqing YANG	16
Interference Alignment in Device-to-device LAN Underlaying Cellular Networks  Lu YANG, Wei ZHANG	21
SS2: Green Wireless Communications	
Energy-delay Tradeoffs of Virtual Base Stations with a Computational-resource-aware Energy Consumption Model  Tao ZHAO, Jian WU, Sheng ZHOU, Zhisheng NIU	26
Optimizing the Energy Efficiency of OFDM with Index Modulation  Miaowen WEN, Xiang CHENG, Liuqing YANG	31
On the Optimality of the Threshold-based Scheduling in Green Communications: A New Proof Xiang CHEN, Wei CHEN	36
Zero-determinant Strategy for Power Control of Small Cell Network  Huaqing ZHANG, Fei LI, Dusit NIYATO, Lingyang SONG, Tao JIANG, Zhu HAN	41
Long Term Throughput and Approximate Capacity of Transmitter-receiver Energy Harvesting Channel with Fading  Jainam DOSHI, Rahul VAZE	46
SS3: Cognitive Cellular Networks	
Spectrum Sharing in Ad Hoc Networks with Antenna Diversity  Chiya ZHANG, Wei ZHANG	51
Cooperative Spectrum Sensing for Full-duplex Cognitive Radio Networks Yun LIAO, Tianyu WANG, Lingyang SONG, Bingli JIAO	56
One-shot Games for Spectrum Sharing Among Co-located Radio Access Networks Sofonias HAILU, Alexis A. DOWHUSZKO, Olav TIRKKONEN, Lu WEI	61
Co-primary Inter-operator Spectrum Sharing Using Repeated Games Bikramjit SINGH, Konstantinos KOUFOS, Olav TIRKKONEN	67
Utility Maximization and Admission Control for Multiple-stream MIMO Cognitive Radio Network Huiqin DU, Tharm RATNARAJAH	72
Spectrum Refarming for OFDMA Small Cells Overlaying CDMA Cellular Networks Shiying HAN, Ying-Chang LIANG, Boon Hee SOONG	77

#### **SS4: Energy-Aware Communications**

User Scheduling in Wireless Information and Power Transfer Networks Zhiguo DING, Vincent POOR	82
Downlink Base Station Cooperation with Energy Harvesting Jie GONG, Sheng ZHOU, Zhenyu ZHOU, Zhisheng NIU	87
Low Complexity Delay-optimal Power Control for Energy Harvesting Wireless System with Finite Energy Storage Fan ZHANG, Vincent K. N. LAU, Kaibin HUANG	92
Coverage of Renewable Powered Cellular Networks Kaibin HUANG, Marios KOUNTOURIS, Victor O. K. LI	97
Energy-Efficient Coordinated Precoding for Multicell System with Transceiver Impairments Shiwen HE, Yongming HUANG, Shi JIN, Haiming WANG, Luxi YANG	102
SS5: Planning and Optimization of Heterogeneous Wireless Networks	
Anticipatory Resource Allocation for Wireless Video Streaming Stefan VALENTIN	107
Optimizing Radio Resources for Heterogeneous QoS-aware OFDMA Networks using Semi-smart Antennas  Aini LI, Yue LIU, Laurie CUTHBERT, Yue GAO, Yapeng WANG	112
Energy Efficiency Gains Through Data Offloading in Heterogeneous Small Cell Networks Henrik KLESSIG, Michael GÜNZEL, Gerhard FETTWEIS	117
A Hierarchical MADM-based Network Selection Scheme for System Performance Enhancement Long LI, Xiaoli CHU, Jie ZHANG	122
Cell-edge Inversion by Interference Cancellation for Downlink Cellular Systems  Liang ZHOU, Kalle RUTTIK, Olav TIRKKONEN, Randall BERRY	127
Range Assignment for Power Optimization in Load-coupled Heterogeneous Networks Lei YOU, Lei LEI, Di YUAN	132
SS6: Signal Processing for Communications	
Machine Learning Techniques for Spectrum Sensing When Primary User Has Multiple Transmit Powers  Kaiqing ZHANG, Jiachen LI, Feifei GAO	137
Distributed Estimation with Analog Forwarding in Energy-harvesting Wireless Sensor Networks <i>Yao-Win Peter HONG</i>	142
On Secret Key Generation From Multiple Observations of Wireless Channels Kang LIU, Serguei PRIMAK, Xianbin WANG	147
Fully-distributed Joint Clock Synchronization and Ranging in Wireless Sensor Networks Under Exponential Delays  Bin LUO, Lei CHENG, Yik-Chung WU	152
Matrix Optimization Problems for MIMO Systems with Matrix Monotone Objective Functions Chengwen XING, Shaodan MA, Yiqing ZHOU	157

### SS7: Economic Theory and Communication Networks

SOAR: Strategy-proof Auction Mechanisms for Distributed Cloud Bandwidth Reservation Yang GUI, Zhenzhe ZHENG, Fan WU, Xiaofeng GAO, Guihai CHEN	162
An Analysis of Two-sided Internet Pricing Sicong LI, Richard T. B. MA	167
ISP and CP Collaboration with Content Piracy Jiwon PARK, Nari IM, Jeonghoon MO	172
A Multi-period Resource Auction Scheme for Machine-to-machine Communications Guan-Yu LIN, Hung-Yu WEI	177
Designing Incentive Compatible Protocols for Background Data Transfers  Costas COURCOUBETIS, Antonis DIMAKIS, Michalis KANAKAKIS	182
SS8a: 5G Wireless Communications I	
On the Probability of Beam Collisions in mm-wave Based Downlink Transmissions Jinho CHOI	187
Finding the Capacity of Next-generation Networks by Linear Programming Chee Wei TAN, Siu-Wai HO, Shan LIN, Raymond W. YEUNG	192
5G: Towards Energy-efficient, Low-latency and High-reliable Communications Networks Shunqing ZHANG, Xiuqiang XU, Yiqun WU, Lei LU	197
System-level Throughput of NOMA Using Intra-beam Superposition Coding and SIC in MIMO Downlink When Channel Estimation Error Exists  Nobuhide NONAKA, Anass BENJEBBOUR, Kenichi HIGUCHI	202
Frequency-domain Based Single-carrier Waveform Design Through Precoder Fumiyuki ADACHI, Amnart BOONKAJAY	207
Power Optimization of D2D Communications Underlying Cellular Networks in Multi-user Scenario Bin GUO, Shaohui SUN, Qiubin GAO	212
SS8b: 5G Wireless Communications II	
An Overview on Intercell Interference Management in Mobile Cellular Networks: from 2G to 5G Yiqing ZHOU, Ling LIU, Hongyan DU, Lin TIAN, Xiaodong WANG, Jinglin SHI	217
Successive Interference Cancelation Amenable Multiple Access (SAMA) for Future Wireless Communications  Xiaoming DAI, Shanzhi CHEN, Shaohui SUN, Shaoli KANG, Yingmin WANG, Zukang SHEN, Jin XU	222
Smart Coordination for Small Cell Enhancement in LTE-advanced System Liu LIU, Lan CHEN, Jing WANG, Kazuaki TAKEDA, Huiling JIANG, Satoshi NAGATA	227
Impact of Rank Adjustment on Downlink Non-orthogonal Multiple Access (NOMA) with SU-MIMO Xiaohang CHEN, Anass BENJEBBOUR, Yang LAN, Anxin LI, Huiling JIANG	233
Performance Evaluation of Large-scale MIMO Systems with Compressed Channel Feedback Jingon JOUNG, Lujin LUO, Sumei SUN	238

## SS9: Cyber Security in Emerging Communication Systems

PAD: Privacy-preserving Data Dissemination in Mobile Social Networks Peixiang ZHONG, Rongxing LU	243
User Self-controllable Profile Matching for Privacy-preserving Mobile Social Networks Danyang HE, Zhenfu CAO, Xiaolei DONG, Jiachen SHEN	248
A Mechanism for Detecting Data Manipulation Attacks on PMU Data Seemita PAL, Biplab SIKDAR	253
CREEP: Cognitive Relaying Enabled Efficiency and Physical-layer Security Preserving Framework Zhicheng CHEN, Bin CAO, Yalin ZHANG, Qinyu ZHANG, Limin SUN	258
Mitigating Byzantine Attacks in Data Fusion Process for Wireless Sensor Networks using Witnesses Jing Yang KOH, Joseph Chee Ming TEO, Wai-Choong WONG	263
SS10: High-Speed Optical Communication Systems	
MPPM Dimming Control for OFDM-based Visible Light Communication Systems Jian CHEN, Xiaodi YOU, Huanhuan ZHENG, Changyuan YU	268
How Much Can Sub-band Virtual Concatenation (VCAT) Help Static Routing and Spectrum Assignment in Elastic Optical Networks?  Xin YUAN, Gangxiang SHEN	273
Mode Multiplexing and De-multiplexing using Few-mode Tilted Fiber Bragg Grating for SDM-WDM Transmission System  Yuru LI, Jianping LI, Man PAN, Zhaohui LI	278
SS11: Smart Coordination for Massively Dense Wireless Networks	
SS11: Smart Coordination for Massively Dense Wireless Networks  Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks  Yunzhou LI, Rui ZHU, Yi LU	283
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks	283 288
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks <i>Yunzhou LI, Rui ZHU, Yi LU</i> MIMO Broadcast Channels with Cooperation Among Densely Clustered Receivers	
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks  *Yunzhou L1, Rui ZHU, Yi LU  MIMO Broadcast Channels with Cooperation Among Densely Clustered Receivers  *Hongliang MAO, Wei FENG, Ning GE*  A Study of Distributed Storage Systems with Network Coding in Wireless Networks	288
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks <i>Yunzhou LI, Rui ZHU, Yi LU</i> MIMO Broadcast Channels with Cooperation Among Densely Clustered Receivers <i>Hongliang MAO, Wei FENG, Ning GE</i> A Study of Distributed Storage Systems with Network Coding in Wireless Networks <i>Awassada PHUTATHUM, Majid GERAMI, Ming XIAO, Dengsheng LIN</i> First-order-reflection MIMO Channel Model for 60 GHz NLOS Indoor WLAN Systems	288 293
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks Yunzhou LI, Rui ZHU, Yi LU  MIMO Broadcast Channels with Cooperation Among Densely Clustered Receivers Hongliang MAO, Wei FENG, Ning GE  A Study of Distributed Storage Systems with Network Coding in Wireless Networks Awassada PHUTATHUM, Majid GERAMI, Ming XIAO, Dengsheng LIN  First-order-reflection MIMO Channel Model for 60 GHz NLOS Indoor WLAN Systems Lei WANG, Jianxin CHEN, Xin WEI, JingWu CUI, Baoyu ZHENG  PAPR Approximation of Continuous-time WFRFT Signals	288 293 298
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks Yunzhou LI, Rui ZHU, Yi LU  MIMO Broadcast Channels with Cooperation Among Densely Clustered Receivers Hongliang MAO, Wei FENG, Ning GE  A Study of Distributed Storage Systems with Network Coding in Wireless Networks Awassada PHUTATHUM, Majid GERAMI, Ming XIAO, Dengsheng LIN  First-order-reflection MIMO Channel Model for 60 GHz NLOS Indoor WLAN Systems Lei WANG, Jianxin CHEN, Xin WEI, JingWu CUI, Baoyu ZHENG  PAPR Approximation of Continuous-time WFRFT Signals Xiaolu WANG, Lin MEI, Naitong ZHANG, Wenshu XIE  Overlapped Clustering for CoMP Transmissions in Massively Dense Wireless Networks	288 293 298 303
Smart Relay Opportunistic Spectrum Sharing in Energy Efficient Cognitive Radio Networks Yunzhou LI, Rui ZHU, Yi LU  MIMO Broadcast Channels with Cooperation Among Densely Clustered Receivers Hongliang MAO, Wei FENG, Ning GE  A Study of Distributed Storage Systems with Network Coding in Wireless Networks Awassada PHUTATHUM, Majid GERAMI, Ming XIAO, Dengsheng LIN  First-order-reflection MIMO Channel Model for 60 GHz NLOS Indoor WLAN Systems Lei WANG, Jianxin CHEN, Xin WEI, JingWu CUI, Baoyu ZHENG  PAPR Approximation of Continuous-time WFRFT Signals Xiaolu WANG, Lin MEI, Naitong ZHANG, Wenshu XIE  Overlapped Clustering for CoMP Transmissions in Massively Dense Wireless Networks Si FENG, Wei FENG, Hongliang MAO, Jianhua LU	288 293 298 303

Balancing Resource Consumption and Handover Delay for Multicast Mobility Hee-jin KIM, Seung-Jae HAN	323
Performance Evaluation for Different Types of Small Cells with Optimized Transmssion Power Sho NAKAZAWA, Mitsutoshi NAKAMURA, Shingo MATSUOKA, Kazuaki TAKEDA, Satoshi SUYAMA, Yukihiko OKUMURA, Hiroyuki OTSUKA	328
Improvement of Cell Edge Performance by Coupling RB Allocation with Beamforming Fan HUANG, Joanna TOMASIK, Véronique VÈQUE	333
MC2: Cellular Networks II	
Dimensioning Stand-alone Cellular Base Station Using Series-of-worst-months Meteorological Data Vinay CHAMOLA, Biplab SIKDAR	339
Heuristic Approach for Subcarrier Assignment in Relay Based Femtocell with Threshold Constraint Yuan-Jung KUO, Sok-Ian SOU, Yinman LEE	344
Context-aware Wireless Broadcast for Next Generation Cellular Networks  Linyu HUANG, Chi Wan SUNG, Chung Shue CHEN	349
Interference Matrix Based User Association Scheme in Heterogeneous Cellular Networks Tiankui ZHANG, Zixiong PENG, Yutao ZHU, Yapeng WANG	354
MC3: Cognitive Radio	
Spectrum Sensing Using Adaptive Threshold based Energy Detection for OFDM Signals Nan WANG, Yue GAO, Laurie CUTHBERT	359
Model Free Dynamic Sensing Order Selection for Imperfect Sensing Multichannel Cognitive Radio Networks: A Q-Learning Approach  Yalin ZHANG, Qinyu ZHANG, Bin CAO, Peipei CHEN	364
Multi-domain Collaborative Spectrum Sensing and Power Control in Presence of Multiple Primary Users  Zheng CHANG, Yang LIU, Fengyu CONG, Xijuan GUO, Zhenyu ZHOU	369
Experimental Analyses of Spectrum Sensing Using Cyclic Autocorrelation Function Diversity Combining Techniques in Cognitive Radio Shusuke NARIEDA, Tetsuya HADA	374
MC4: Communications Theory	
Filter-and-forward Relay Beamforming for OFDM-based Cognitive Networks Song YANG, Teruyuki MIYAJIMA	379
Adaptive Frequency-domain Puncturing for Turbo Coded Single-carrier Transmission Kengo NAKAMURA, Kenichi HIGUCHI	384
Performance Analysis for Distributed Antenna Systems Based on Random Matrix Theory Ang YANG, Chengwen XING, Zesong FEI, Jingming KUANG	389
A Study on the Distribution of the Envelope and the Capacity of Underwater Acoustic Channels Rym HICHERI, Matthias PÄTZOLD, Batool TALHA, Neji YOUSSEF	394
Markov Analysis of Modulation & Coding Schemes in OFDMA Networks Gim Hwa ENG, Ruo Jun CAI, Peter Han Joo CHONG	400

Performance Analysis of Cooperative HARQ-IR over Time-correlated Nakagami-m Fading Channels Xuanxuan YANG, Zheng SHI, Shaodan MA, Kam-Weng TAM	404
MC5: PHY Design and Analysis	
Adaptive Analog Network Coding Strategy with Variable Slot Numbers in Two-Way Relay Systems Fengyi BAI, Li SUN, Pinyi REN	409
FPGA Implementation of Peak Cancellation for PAPR Reduction of OFDM Signals Jiajia SONG, Hideki OCHIAI	414
Performance Evaluation of OQAM Based OFDM Systems Using an ACLR and EVM Restricted Peak Amplitude Cancellation Scheme <i>Takaya HINO, Osamu MUTA, Hiroshi FURUKAWA</i>	419
Approximating Correlated Shadowing Loss Models for Wireless Sensor Networks Yiu Wing Edwin CHAN, Boon Hee SOONG	424
A Tapered Single-conductor Strip Leaky-wave Antenna with Suppressed Back Lobe Jeng Hau LU, Chia Ching CHEN, Christina F. JOU	429
X-band Predistortion Linearized GaN HPA for Broadband Satellite Communications Xiaoqiang XIE, Zheng ZHONG, Yong-Xin GUO	433
MC6: MAC Protocols	
TDM Based Reference Signal Multiplexing for Faster-than-Nyquist Signaling Using OFDM/OQAM Takahiro HIRANO, Yuichi KAKISHIMA, Mamoru SAWAHASHI	437
Spectrum Access Strategies Based on the Ratio of Throughput to Spectrum Consumption in the Context of Spectrum Fragmentation in Distributed Cognitive Radio Networks Shuai ZHANG, Yanhui LU, Fang WANG, Xiaomin MU	442
Modeling Spectrum Access Strategies in Cognitive Radio Networks Using Colored Petri Nets <i>Zhaoping LI, Yanhui LU, Shouyi YANG</i>	447
Learning Assisted Rendezvous Channel in Cognitive Radio System Osamu TAKYU, Takayuki YAMAKITA, Takeo FUJII, Fumihito SASAMORI, Shiro HANDA	452
Posture-aware Medium Access Approach Under Walking Scenery for Wireless Body Area Network Feng WANG, Fengye HU, Lu WANG, Yu DU, Xiaolan LIU	457
Wake-up Frame Detection using Correlated Received Signal Strength for On-demand WiFi Wake-up <i>Tomoyuki TANI, Hiroyuki YOMO</i>	462
MC7: MIMO I	
Adaptive Generalized Space Shift Keying and Downlink Multi-user Transmission in MIMO Fading Channels  Dong LIANG, Pinyi REN, Li SUN, Qinghe DU, Yichen WANG	467
A Low-complexity Direction-of-arrival Estimation Algorithm for Full-dimension Massive MIMO Systems  Kai-Yu YANG, Jwo-Yuh WU, Wen-Hsuan LI	472
Low-complexity Signal Detection Using CG Method for Uplink Large-scale MIMO Systems Yuting HU, Zhongxu WANG, Xinyu GAO, Jiaqi NING	477

User Selection Design for MIMO OFDMA Systems Based on Interference Alignment Wei-Chen PAO, Mei-Chun LIN, Yung-Fang CHEN	482
On the Mutual Information and Constellation Design Criterion of Spatial Modulation MIMO Systems Shuaishuai GUO, Haixia ZHANG, Jia ZHANG, Dongfeng YUAN	487
Soft-input Arithmetic Decoding for Optimized Scalable Image Transmission Over a Realistic MIMO	492
Channel Marwa MHAMDI, Amin ZRIBI, Clency PERRINE, Yannis POUSSET, Christian OLIVIER, Samy KAMBOU	
MC8: MIMO II	
Robust Beamforming Design Under Imperfect CSI for Two-way Relay System with Reciprocal Channels	497
Yi WANG, Kang SONG, Baofeng JI, Yongming HUANG, Luxi YANG	
Dynamic Feedback Bits Allocation in Distributed Antenna Systems with Limited Feedback <i>Xiaoming CHEN, Jian CHEN, Chau YUEN</i>	502
Vector Perturbation for Single-carrier MU-MIMO Downlink Shohei YOSHIOKA, Shinya KUMAGAI, Fumiyuki ADACHI	507
Leakage-based Power Allocation for Relaxed SLNR Beamforming in Multi-cell MU-MIMO Systems Liang DONG, Gang WU, Hao FENG, Shaoqian LI	512
Base Station Antenna Configuration for Robust MU-MIMO Takuya ISHIHARA, Kei SAKAGUCHI, Seiichi SAMPEI, Gia Khanh TRAN	517
A Novel Assisted Near-ideal Joint Decision Feedback Equalizer For MIMO Spatial Multiplexing Karim BADAWI, Qiuting HUANG	522
MC9: Network Protocols & Management I	
Content Distribution in Wireless Ad Hoc Networks with Network Coding Jin WANG, Teck Yoong CHAI, Wai-Choong WONG	528
Utility Fairness via Association Control in Wireless Mesh Networks Jinqiang YU, Wai-Choong WONG	533
An Analytical Model on Eavesdropping Attacks in Wireless Networks Xuran LI, Hong-Ning DAI, Qinglin ZHAO	538
A Neighborhood Connectivity-based Trust Scheme to Identify Active Black Hole Attacks Ruo Jun CAI, Peter Han Joo CHONG	543
MC10: Network Protocols & Management II	
Data Structure Enabling Retrieval of Time Series of Traffic with the Requested Granularity <i>Yoshihiro TSUJI, Yuichi OHSITA, Masayuki MURATA</i>	549
Enhanced Packet Delivery in Delay Limited Rateless Coded Multihop Networks Ashish JAMES, A. S. MADHUKUMAR	554
TIM Encoding for IEEE 802.11ah Based WLAN Shoukang ZHENG, Zhongding LEI	559
Fuzzy Multiple Attribute Decision Routing in VANETs  Gen LI, Maode MA, Chunfeng LIU, Yantai SHU	564

An Improved Transport Algorithm Over DCCP in Wireless Ad Hoc Networks  Li YU, Xiaopei LI, Peng ZHANG, Guangyu LI, Maode MA	569
MC11: Resource Allocation	
Low-complexity and Optimal Resource Allocation Scheme for Scalable Video Transmission Over Realistic Noisy MIMO Channels  Samy KAMBOU, Clency PERRINE, Yannis POUSSET, Christian OLIVIER, Marwa MHAMDI	574
Joint Rate Control and Scheduling for Video Streaming Over OFDMA Networks  Peng Hui TAN, Jinghong ZHENG, Zhengguo LI, Sumei SUN	579
Joint Uplink and Downlink Resource Optimization for OFDMA Systems: When Base Station Serves as a Relay  Ying-Chang LIANG, Jian TIAN, Yiyang PEI, Hon Fah CHONG	584
Cost-efficient Residential Load Scheduling in Smart Grid Jinghuan MA, He CHEN, Lingyang SONG, Yonghui LI	590
Performance of an E-SDM/FDD System Using an Iterative Weight Optimization and Control Algorithm  Yusuke OKI, Osamu MUTA, Hiroshi FURUKAWA	595
Resource Allocation for Two-way Relay Cellular Networks With and Without Network Coding <i>Yi CHEN, Chi Wan SUNG</i>	600
MC12: Channel Estimation and Signal Detection	
Adaptive MIMO Channel Estimation using Sparse Variable Step-size NLMS Algorithms Guan GUI, Li XU, Lin SHAN, Fumiyuki ADACHI	605
Performance of Channel Coding and Equalization for Acoustic Telemetry Along Drill Strings Konstantinos PELEKANAKIS, Mandar CHITRE, Lakshmi Sutha KUMAR, Yong Liang GUAN	610
Low-complexity MIMO Detection for Approaching Near-ML Performance <i>Yinman LEE</i>	615
Reliable Channel Estimation Based on Bayesian Compressive Sensing for TDS-OFDM Systems <i>Zhenkai FAN, Zhaohua LU, Yuting HU</i>	620
Performance of Downlink Control Information Signals Using Decision-feedback Channel Estimation for EPDCCH  Shinya HIRAYAMA, Kazuaki TAKEDA, Yuichi KAKISHIMA, Mamoru SAWAHASHI	625
A Partial Coherent Detector for Orthogonal Modulations in Two-way Relay Communications with Physical Network Coding and Fading  Xiaobin LI, Paul HO	630
Author Index	635