PHYSICAL LAYER

MONDAY 3 APRIL 2006
9:00-10:00 ROOM N235

PHY01: MIMO

Session Chair: H. Zhu, *ISTAR, Singapore*

PHY01-1: Statistical Antenna Selection for MIMO Systems in Double-Sided Correlated Rayleigh Fading Channels

Shi Jin, *Southeast University, PR China;* Xiqi Gao, *Southeast University, PR China*

PHY01-2: A Fast Sub-Optimal Antenna Selection Algorithm in MIMO Systems

ShenFa Liu, *Beijing University of Posts and Telecommunications, China;* ZhiQiang He, *Beijing University of Posts and Telecommunications, China;* Weiling Wu, *Beijing University of Posts and Telecommunications, China;* Xin Chang, *Siemens Ltd., China; Zheng Li, Siemens Ltd., China;* Egon Schulz, *Siemens AG, Germany*

PHY01-3: Receiver Selection Diversity Schemes without Channel Estimation for Alamouti MIMO Systems

Wenyu Li, *University of Alberta, Canada;* Norman C. Beaulieu, *University of Alberta, Canada*

PHY01-4: On the Outage Capacity Distribution of Correlated Keyhole MIMO Channels

G. Levin, *University of Ottawa, Canada;* S. Loyka, *University of Ottawa, Canada*

MONDAY 3 APRIL 2006
9:00-10:00 ROOM N237

PHY02: CROSS LAYER DESIGN

Session Chair: Tan Wong, *University of Florida*

PHY02-1: Optimal Cross-Layer Design for Throughput Maximisation of Multi-Class VSG CDMA in Rayleigh Fading Channel

P. Sedtheetorn, *The University of Manchester, UK;* K. A. Hamdi, *The University of Manchester, UK*

PHY02-2: Joint PHY/MAC Based Link Adaptation for Wireless LANs with Multipath Fading

Sayantan Choudhury, *University of Califonia, Santa Barbara, USA;* Jerry D. Gibson, *University of Califonia, Santa Barbara, USA*

PHY02-3: Power Control and Proportional Fair Scheduling with Minimum Rate Constraints in Clustered Multihop TD/CDMA Wireless Ad Hoc Networks

Lijun Qian, *Prairie View A&M University, USA;* Ning Song, *Prairie View A&M University, USA;* Dhadesugoor R. Vaman, *Prairie View A&M University, USA;* Xiangfang Li, *Rutgers University, USA;* Zoran Gajic, *Rutgers University, USA*

PHY02-4: Cross-Layer Design for Mobile Ad Hoc Networks: Energy, Throughput and Delay-Aware Approach

Xinsheng Xia, *The University of Texas at Arlington, USA;* Qingchun Ren, *The University of Texas at Arlington, USA;* Qilian Liang, *The University of Texas at Arlington, USA*

MONDAY 3 APRIL 2006
9:00-10:00 ROOM N238

PHY03: UWB SYSTEMS – I

Session Chair: Vinod Sharma, *Indian Institute of Science, India*

PHY03-1: On the Performance of Non-Coherent and Differential-Coherent UWB-DCC System

Chia-Chin Chong, *Samsung Advanced Institute of Technology, Korea;* Su Khiong Yong, *Samsung Advanced Institute of Technology, Korea*

PHY03-2: Multi-User Interference Performance Comparison of Direct-Sequence Impulse Radio and Direct-Sequence UWB in AWGN

Bo Hu, *University of Alberta, Canada;* Norman C. Beaulieu, *University of Alberta, Canada*

PHY03-3: Performance Comparison of Ultra-Wideband Time-Hopping, DSSS and OFDM Multiple Access Schemes for Wireless Sensor Networks

Naveel Riaz, *King's College London, UK;* Mohammad Ghavami, *King's College London, UK*

PHY03-4: Performance of Multi-Band OFDM UWB System with Multiple Receive Antennas

Alireza Seyedi, *Philips Research North America, USA;* Vasanth Gaddam, *Philips Research North America, USA;* Dagnachew Birru, *Philips Research North America, USA*

MONDAY 3 APRIL 2006
9:00-10:00 ROOM N239

PHY04: OFDM SYSTEMS – I

Session Chair: Mort Naraghi-Pour, *Louisiana State University, US*

PHY04-1: Co-Channel Diversity Schemes for an OFDM-based Cellular System with One-Cell Frequency Reuse

Changqin Huo, *University of Calgary, Canada;* Abu B. Sesay, *University of Calgary, Canada;* Abraham O. Fapojuwo, *University of Calgary, Canada*

PHY04-2: Computationally Efficient Resource Allocation for Multiuser OFDM Systems

Xiang Gao, *Louisiana State University, USA;* Mort Naraghi-Pour, *Louisiana State University, USA*

PHY04-3: A Multiuser Interference Cancellation Scheme for Uplink OFDMA

S. Manohar, *Indian Institute of Science, India;* V. Tikiya, *Indian Institute of Science, India;* D. Sreedhar, *Indian Institute of Science, India;* A. Chockalingam, *Indian Institute of Science, India*

PHY04-4: Robust Uplink Carrier Frequency Offset Estimation with Interference Mitigation in OFDMA Systems

Zhongshan Zhang, *DoCoMo, PR China;* Hidetoshi Kayama, *DoCoMo, PR China*

MONDAY 3 APRIL 2006
11:00-12:30 ROOM N235

PHY05: LAYERED SPACE TIME SYSTEMS AND STBC

Session Chair: Jiang Zhou Wang, *University of Kent*

PHY05-1: MIPS Cost Estimation for OFDM-VBLAST Systems

Haiyan Jiao, *Linkoping University, Sweden;* Anders Nilsson, *Linkoping University, Sweden;* Eric Tell, *Linkoping University, Sweden;* Dake Liu, *Linkoping University, Sweden*

PHY05-2: Analytical BER Analysis of the V-BLAST in a Rayleigh Fading Channel

Sergey Loyka, *University of Ottawa, Canada;* Francois Gagnon, *Ecole de Technologie Superieure, Canada*

PHY05-3: A New Layered Space-Time-Frequency Architecture with LDPC Coding for OFDM MIMO Multiplexing

Yuanliang Huang, *University of Hong Kong, Hong Kong;* Jiangzhou Wang, *University of Kent, UK;* Kenichi Higuchi, *NTT DoCoMo, Japan;* Mamoru Sawahashi, *NTT DoCoMo, Japan*

PHYSICAL LAYER

PHY05-4: An Equalization Technique for Distributed STBC-OFDM System with Multiple Carrier Frequency Offsets

Zheng Li, *Huazhong University of Science and Technology, China;* Daiming Qu, *Huazhong University of Science and Technology, China;* Guangxi Zhu, *Huazhong University of Science and Technology, China*

THURSDAY 6 APRIL 2006
9:00-10:30 ROOM N235

PHY06: MIMO - OFDM

Session Chair: Ha Nguyen, *University of Saskatchewan, Canada*

PHY06-1: Receiver Design for Bit-interleaved MIMO-OFDM Systems over Time-varying Channels

Fu-Hsuan Chiu, *University of Southern California, USA;* Sau-Hsuan Wu, *National Chiao-Tung University, Taiwan;* C.-C. Jay Kuo, *University of Southern California, USA*

PHY06-2: Low Complexity Linear MMSE Detector with Recursive Update Algorithm for Iterative Detection-Decoding MIMO OFDM System

Daniel N. Liu, *University of California-Los Angeles, USA;* Michael P. Fitz, *University of California-Los Angeles, USA*

PHY06-3: Recursive Space-Time Decoding for MIMO OFDM Systems

Jaekwon Kim, *Yonsei University at Wonju, South Korea;* Eung Sun Kim, *Samsung Advanced Institute of Technology, South Korea;* Jong Hyuk Lee, *Samsung Advanced Institute of Technology, South Korea;* Yungsoo Kim, *Samsung Advanced Institute of Technology, South Korea*

PHY06-4: Frequency Offset Synchronization and Channel Estimation for the MIMO-OFDM System using Rao-Blackwellized Gauss-Hermite Filter

Kyeong Jin Kim, *Nokia Research Center, USA;* Ronald A. Iltis, *University of California, Santa Barbara, USA*

MONDAY 3 APRIL 2006
11:00-12:30 ROOM N238

PHY07: UWB SYSTEMS – II

Session Chair: Alireza Seyedi, *Philips Research North America*

PHY07-1: Design and Analysis of Channel-Phase-Precoded Ultra Wideband (CPPUWB) Systems

Yu-Hao Chang, *University of Southern California, USA;* Shang-Ho Tsai, *University of Southern California, USA;* Xiaoli Yu, *University of Southern California, USA;* C.-C. Jay Kuo, *University of Southern California, USA*

PHY07-2: UWB Ranging with Energy Detectors using Ternary Preamble Sequences

Zhongding Lei, *Institute for Infocomm Research, Singapore;* Francois Chin, *Institute for Infocomm Research, Singapore;* Yuen-Sam Kwok, *Institute for Infocomm Research, Singapore*

PHY07-3: Overcomplete Dictionary-based Ultra-Wideband Signal Detection

Wei Li, *University of Victoria, Canada;* T. Aaron Gulliver, *University of Victoria, Canada*

PHY07-4: Studying the Effect of Bandwidth on Performance of UWB Positioning Systems

Bardia Alavi, *Worcester Polytechnic Institute, USA;* Kaveh Pahlavan, *Worcester Polytechnic Institute, USA*

MONDAY 3 APRIL 2006
11:00-12:30 ROOM N237

PHY08: COOPERATIVE COMMUNICATIONS I

Session Chair: *TBA*

PHY08-1: Performance Comparison of Cooperative and Non-cooperative Relaying Mechanisms in Wireless Networks

Sedat Gormus, *University of Bristol, UK;* Dritan Kaleshi, *University of Bristol, UK;* Joe McGeehan, *University of Bristol, UK;* Alistair Munro, *University of Bristol, UK*

PHY08-2: Performance Comparison of Conventional and Cooperative Multihop Transmission

Jun Zhang, *The Chinese University of Hong Kong, Hong Kong;* Tat M. Lok, *The Chinese University of Hong Kong, Hong Kong*

PHY08-3: Bounds on Ergodic Capacity of Multirelay Cooperative Links with Channel State Information

Aitor del Coso, *Centre Tecnològic de Telecomunicacions de Catalunya, Spain;* Christian Ibars, *Centre Tecnològic de Telecomunicacions de Catalunya, Spain*

PHY08-4: Impact of Mobility on Cooperative Communication

Krishna Srikanth Gomadam, *University of California-Irvine, USA;* Syed Ali Jafar, *University of California-Irvine, USA*

MONDAY 3 APRIL 2006
14:00-15:30 ROOM N238

PHY09: WIRELESS LAN'S

Session Chair: *TBA*

PHY09-1: Access Point Selection Strategy in IEEE 802.11e WLAN Networks

Shojiro Takeuchi, *Waseda University, Japan;* Kaoru Sezaki, *University of Tokyo, Japan;* Yasuhiko Yasuda, *Waseda University, Japan*

PHY09-2: Performance Anomalies of Nonoptimally Configured Wireless LANs

Pablo Serrano, *Universidad Carlos III, Spain;* Albert Banchs, *Universidad Carlos III, Spain;* Telemaco Melia, *NEC Network Laboratories, Germany;* Luca Vollero, *Consorzio Nazionale CINI, Italy*

PHY09-3: An Opportunistic Power-Saving Mode and Scheduler Design for Wireless Local Area Networks

Jeongjoon Lee, *LS Industrial Systems Co., Ltd., Korea;* Catherine Rosenberg, *University of Waterloo, Canada;* Edwin K. P. Chong, *Colorado State University, USA*

PHY09-4: Adaptive Video Multicast over Wireless LANs

Soumya Das, *Rutgers University, USA;* Dipankar Raychaudhuri, *Rutgers University, USA;* Kumar Ramaswamy, *Thomson Inc., USA;* Charles Wang, *Thomson Inc., USA*

PHYSICAL LAYER

MONDAY 3 APRIL 2006
14:00-15:30 ROOM N236

PHY10: TESTBED, MEASUREMENT AND PROTOTYPING

Session Chair: Yuanbin Guo, *Nokia, USA*

PHY10-1: Adaptable Measurement Testbed for Wireless Systems Applied to MIMO Channel Modeling

Olivier Delangre, *Université Libre de Bruxelles, Belgium;* Philippe De Doncker, *Université Libre de Bruxelles, Belgium;* Martine Lienard, *Université de Lille, France;* Pierre Degauque, *Université de Lille, France*

PHY10-2: Capacity of Measured Ricean and Rayleigh Indoor MIMO Channels at 2.4 GHz with Polarization and Spatial Diversity

Vikram R. Anreddy, *Georgia Institute of Technology, USA;* Mary Ann Ingram

PHY10-3: Next Generation Wireless LAN System Design and Implementation Based on MIMO-OFDM

Heejung Yu, *Electronics and Telecommunications Research Institute, Korea;* Kwhanghyun Ryu, *Electronics and Telecommunications Research Institute, Korea;* Kyonghee Song, *Electronics and Telecommunications Research Institute, Korea;* Yunjoo Kim, *Electronics and Telecommunications Research Institute, Korea;* Seungwook Min, *Electronics and Telecommunications Research Institute, Korea;* Sok-kyu Lee, *Electronics and Telecommunications Research Institute, Korea*

PHY10-4: Rapid Prototyping and VLSI Exploration for 3G/4G MIMO Wireless Systems Using Integrated Catapult-C Methodology

Yuanbin Guo, *Nokia Research Center, USA;* Dennis McCain, *Nokia Research Center, USA*

MONDAY 3 APRIL 2006
16:00-17:30 ROOM N238

PHY11: 802.16 NETWORKS

Session Chair: Vinod Sharma, *Indian Institute of Science, India*

PHY11-1: QoS-Guaranteed Cross-Layer Adaptive Transmission Algorithms for the IEEE 802.16 OFDMA System

Stanislav A. Filin, *JSC Kodofon, Russia;* Sergey N. Moiseev, *JSC Kodofon, Russia;* Mikhail S. Kondakov, *JSC Kodofon, Russia;* Alexandre V. Garmonov, *JSC Kodofon, Russia;* Do Hyon Yim, *Samsung Electronics Co., Ltd., Korea;* Jaeho Lee, *Samsung Electronics Co., Ltd., Korea;* Sunny Chang, *Samsung Electronics Co., Ltd., Korea;* Yun Sang Park, *Samsung Electronics Co., Ltd., Korea*

PHY11-2: Combining Random Backoff with a Cross-Layer Tree Algorithm for Random Access in IEEE 802.16

Xin Wang, *University of Minnesota, USA;* Yingqun Yu, *University of Minnesota, USA;* Georgios B. Giannakis, *University of Minnesota, USA*

PHY11-3: Performance Evaluation of Broadband Fixed Wireless System Based on IEEE 802.16

Wout Joseph, *Ghent University, Belgium;* Luc Martens, *Ghent University, Belgium*

PHY011-4: Efficient and Fair Scheduling of Uplink and Downlink in IEEE 802.16 OFDMA Networks

Vandana Singh, *Indian Institute of Science, India;* Vinod Sharma, *Indian Institute of Science, India*

MONDAY 3 APRIL 2006
14:00-15:30 ROOM N239

PHY12: CDMA SYSTEMS – I

Session Chair: Jiang Zhou Wang, *University of Kent*

PHY12-1: Cascade Fuzzy Radio Resource Management using SDMA Scheduling in TD-CDMA System

Jeich Mar, *Yuan-Ze University, ROC;* Chih-Yang Kao, *Industrial Technology Research Institute, ROC*

PHY12-2: Call Admission Control for CDMA Cellular Networks Supporting Multimedia Services

Mort Naraghi-Pour, *Louisiana State University, USA;* Yaping Chai, *Louisiana State University, USA*

PHY12-3: BER Analysis of Weighted Interference Cancellation in Multicarrier DS-CDMA Systems

S. Manohar, *Indian Institute of Science, India;* V. Tikiya, *Indian Institute of Science, India;* R. Annavajjala, *University of California, San Diego, USA;* A. Chockalingam, *Indian Institute of Science, India*

PHY12-4: Differentially Coherent Code Acquisition in the Multiple Transmit/Receive Antenna Aided DS-CDMA Downlink

SeungHwan Won, *University of Southampton, UK;* Lajos Hanzo, *University of Southampton, UK*

MONDAY 3 APRIL 2006
14:00-15:30 ROOM N237

PHY13: RELAYING TECHNIQUES – I

Session Chair: Sergey Loyka, *University of Ottawa*

PHY13-1: Optimum Threshold-Selection Relaying for Decode-and-Forward Cooperation Protocol

W. Pam Siriwongpairat, *University of Maryland, USA;* Thanongsak Himsoon, *University of Maryland, USA;* Weifeng Su, *State University of New York at Buffalo, USA;* K. J. Ray Liu, *University of Maryland, USA*

PHY13-2: Multi-Antenna Aspects of Wireless Fixed Relays

A. Adinoyi, *Carleton University, Canada;* H. Yanikomeroglu, *Carleton University, Canada*

PHY13-3: Coherent Multiuser Relaying with Partial Relay Cooperation

Armin Wittneben, *ETH Zurich, Switzerland*

PHY013-4: Cooperative Diversity with Opportunistic Relaying

Aggelos Bletsas, *Massachusetts Institute of Technology, USA;* Hyundong Shin, *Massachusetts Institute of Technology, USA;* Moe Z. Win, *Massachusetts Institute of Technology, USA;* Andrew Lippman, *Massachusetts Institute of Technology, USA*

MONDAY 3 APRIL 2006
11:00-12:30 ROOM N239

PHY14: CHANNEL ESTIMATION IN OFDM

Session Chair: *TBA*

PHY14-1: Time-Variant Doppler Frequency Estimation and Compensation for Mobile OFDM Systems

Zan Li, *Xidian University, China;* Jueting Cai, *Huawei Technologies Co., Ltd., China;* Jian Shen, *China Electronics Systems Engineering Corporation, China*

PHY14-2: Polynomial Rooting -based Maximum Likelihood Carrier Frequency Offset Estimation for OFDM Systems

Feifei Gao, *National University of Singapore, Singapore;* A. Nallanathan, *National University of Singapore, Singapore*

PHYSICAL LAYER

PHY14-3: Optimal OFDM Channel Estimation with Carrier Frequency Offset and Phase Noise

Darryl Dexu Lin, *University of Toronto, Canada;* Ryan A. Pacheco, *University of Toronto, Canada;* Teng Joon Lim, *University of Toronto, Canada;* Dimitrios Hatzinakos, *University of Toronto, Canada*

PHY14-4: Performance Evaluation of Channel Estimation Techniques for MIMO-OFDMA Systems with Adaptive Sub-carrier Allocation

Ying Peng, *University of Bristol, UK;* Simon Armour, *University of Bristol, UK;* J. McGeehan, *University of Bristol, UK*

TUESDAY 4 APRIL 2006
9:00-10:00 ROOM N238

PHY15: UWB SYSTEMS – III

Session Chair: Alireza Seyedi, *Philips Research North America*

PHY15-1: Measurement and Characterization of the Near-Ground Indoor Ultra Wideband Channel

A. Hugine, *Virginia Polytechnic Institute and State University, USA;* H. I. Volos, *Virginia Polytechnic Institute and State University, USA;* J. Gaeddert, *Virginia Polytechnic Institute and State University, USA;* R. M. Buehrer, *Virginia Polytechnic Institute and State University, USA*

PHY15-2: Adaptive Rate QS-CDMA UWB Systems Using Ternary OVSF Codes with a Zero-Correlation Zone

Di Wu, *Rutgers University, USA;* Predrag Spasojeviç, *Rutgers University, USA*

PHY15-3: Multiband UWB System Performance with Random-Clustering Multipath-Rich Fading Channels

W. Pam Siriwongpairat, *University of Maryland, USA;* Weifeng Su, *State University of New York at Buffalo, USA;* K. J. Ray Liu, *University of Maryland, USA*

PHY15-4: Bit Error Rates of IR-UWB Transceiver Types at Sub-Nyquist Sampling Rates

I˙smail Güvenç, *University of South Florida, USA;* Hüseyin Arslan, *University of South Florida, USA*

THURSDAY 6 APRIL 2006
14:00-15:30 ROOM N233

PHY16: MULTIUSER DETECTION - I

Session Chair: Balu Santhanam, *University of New Mexico, US*

PHY16-1: Blind Multiuser Receiver Design in ISI Channels

Shu Wang, *LG Electronics Mobile Research, USA;* James Caffery Jr., *University of Cincinnati, USA*

PHY16-2: A Near Optimum Adaptive Iterative MMSE Receiver for Interference Suppression in W-CDMA Systems

Aditya Trivedi, *Madhav Institute of Tech. and Science, India;* D. K. Mehra, *Indian Institute of Technology, India*

PHY16-3: Iterative Data-Aided Channel Estimation and Multiuser Detection for Coded CDMA Systems

Shahram Talakoub, *University of Windsor, Canada;* Behnam Shahrrava, *University of Windsor, Canada*

PHY016-4: Hebbian Learning Based Blind Adaptive Multiuser Detection in DS-CDMA Systems

Malay Gupta, *Southern Methodist University, USA;* Balu Santhanam, *University of New Mexico, USA*

WEDNESDAY 5 APRIL 2006
14:00-15:30 ROOM N239

PHY17: PERFORMANCE ANALYSIS – I

Session Chair: Andrej Stefanov, *Polytechnic University, USA*

PHY17-1: BER Performance of Different Single-User Detection Techniques for SIMO and 2IMO Downlink MC-CDMA Systems

Po-Ying Chen, *National Taiwan University, Taiwan;* Hsueh-Jyh Li, *National Taiwan University, Taiwan*

PHY17-2: An Accurate Method for Approximating Probability Distributions in Wireless Communications

Raymond Kwan, *The University of British Columbia, Canada;* Cyril Leung, *The University of British Columbia, Canada*

PHY17-3: Exact Pairwise Error Probability for Block Fading OFDM Systems

Jerry C. H. Lin, *Polytechnic University, USA;* Andrej Stefanov, *Polytechnic University, USA*

PHY17-4: Exact BER Performance of Asynchronous DS-CDMA Systems Using Quadriphase Spreading and QPSK Modulation over Rayleigh Channels

Xiang Liu, *University of Southampton, UK;* Lajos Hanzo, *University of Southampton, UK*

THURSDAY 6 APRIL 2006
14:00-15:30 ROOM N236

PHY18: SCHEDULING

Session Chair: Aditya Dua, *Stanford University, USA*

PHY18-1: Delay Constrained Multiuser Scheduling Schemes Based on Upper-Layer Performance

Hongyuan Zhang, *North Carolina University, USA;* Huaiyu Dai, *North Carolina University, USA*

PHY18-2: Hierarchical Scheduling Algorithm for Guaranteeing QoS of Delay-Sensitive Traffic

Seon Yeob Baek, *KAIST, Korea;* Dan Keun Sung, *KAIST, Korea*

PHY18-3: Adaptive Delay Threshold-based Priority Queueing Scheme for Packet Scheduling in Mobile Broadband Wireless Access System

Jin M. Ku, *Korea University, Korea;* Sung K. Kim, *Korea University, Korea;* Sueng H. Kim, *SK Telecom, Korea;* Simon Shin, *SK Telecom, Korea;* Jay H. Kim, *SK Telecom, Korea;* Chung G. Kang, *Korea University, Korea*

PHY018-4: Power Control and QoS Trade-offs for Real-Time Wireless Traffic

Aditya Dua, *Stanford University, USA;* Nicholas Bambos, *Stanford University, USA*

MONDAY 3 APRIL 2006
9:00-10:30 ROOM N236

PHY19: SENSOR NETWORKS

Session Chair: Mustafa Mehmet Ali, *Concordia University, Canada*

PHY19-1: A Contention-based Energy-Efficient MAC Protocol for Wireless Sensor Networks

Qingchun Ren, *University of Texas at Arlington, USA;* Qilian Liang, *University of Texas at Arlington, USA*

PHY19-2: Cross-Layer Wireless Sensor Network Radio Power Management

Michael I. Brownfield, *Virginia Polytechnic Institute and State University, USA;* Almohanad S. Fayez, *Virginia Polytechnic Institute and State University, USA;* Theresa M. Nelson, *Virginia Polytechnic Institute and State University, USA;* Nathaniel Davis IV, *Virginia Polytechnic Institute and State University, USA*

PHY19-3: Performance Analysis of a Wireless Sensor Network

M. K. Mehmet Ali, *Concordia University, Canada;* H. Gu, *Concordia University, Canada*

PHY19-4: CMAC—A Multi-Channel Energy Efficient MAC for Wireless Sensor Networks

Kaushik R. Chowdhury, *University of Cincinnati, USA;* Nagesh Nandiraju, *University of Cincinnati, USA;* Dave Cavalcanti, *University of Cincinnati, USA;* Dharma P. Agrawal, *University of Cincinnati, USA*

MONDAY 3 APRIL 2006
16:00-17:30 ROOM N237

PHY20: RELAYING TECHNIQUES – II

Session Chair: Harish Vishwanathan, *Lucent Technologies, US*

PHY20-1: Comparison of Schemes for Streaming Multicast in Cellular Networks with Relays

Jay Kumar Sundararajan, *Massachusetts Institute of Technology, USA;* Harish Viswanathan, *Bell Laboratories-Lucent Technologies, USA*

PHY20-2: Outage Analysis of Multi-Node Amplify-and-Forward Relay Networks

Karim G. Seddik, *University of Maryland, USA;* Ahmed K. Sadek, University of Maryland, USA; Weifeng Su, *State University of New York at Buffalo, USA;* K. J. Ray Liu, *University of Maryland, USA*

PHY20-3: Decode-and-Forward Differential Modulation Scheme with Threshold-based Decision Combining

Thanongsak Himsoon, *University of Maryland, USA;* W. Pam Siriwongpairat, *University of Maryland, USA;* Weifeng Su, *State University of New York at Buffalo, USA;* K. J. Ray Liu, *University of Maryland, USA*

PHY20-4: Differential Modulation for Multi-Node Amplify-and-Forward Wireless Relay Networks

Thanongsak Himsoon, *University of Maryland, USA;* Weifeng Su, *State University of New York at Buffalo, USA;* K. J. Ray Liu, *University of Maryland, USA*

TUESDAY 4 APRIL 2006
9:00-10:30 ROOM N238

PHY21: ADVANCED CODING TECHNIQUES - I

Session Chair: *TBA*

PHY21-1: A Purely Symbol-based Precoded and LDPC-Coded Iterative-Detection Assisted Sphere-Packing Modulated Space-Time Coding Scheme

O. Alamri, *University of Southampton, UK;* S. X. Ng, *University of Southampton, UK;* F. Guo, *University of Southampton, UK;* L. Hanzo, *University of Southampton, UK*

PHY21-2: Symbol-Flipping based Decoding of Generalized Low-Density Parity-Check Codes over GF(q)

Fang-Chun Kuo, *University of Southampton, UK;* Lajos Hanzo, *University of Southampton, UK*

PHY21-3: Union Bounds to Error Probabilities of LDPC-coded Q-ary Modulation Systems over Fast Fading MIMO Channels

Jingqiao Zhang, *University of Pittsburgh, USA;* Heung-No Lee, *University of Pittsburgh, USA*

PHY21-4: Multidimensional 16-QAM Constellation Labeleing of BI-STCM-ID with the Alamouti Scheme

Aeman Saad Mohammed, *University of Ulm, Germany;* Wahyu Hidayat, *University of Ulm, Germany;* Martin Bossert, *University of Ulm, Germany*

TUESDAY 4 APRIL 2006
11:00-12:30 ROOM N238

PHY22: FEEDBACK BASED COMMUNICATION SYSTEMS

Session Chair: Sergey Loyka, *University of Ottawa*

PHY22-1: Unitary Precoding and Power Control in MIMO Systems with Limited Feedback

Ramakrishna Yellapantula, *University of Illinois at Chicago, USA; Motorola Inc., USA;* Yingwei Yao, *University of Illinois at Chicago, USA;* Rashid Ansari, *University of Illinois at Chicago, USA*

PHY22-2: Performance of Analog Feedback in Closed-Loop Transmit Diversity Systems

Eddy Chiu, *Simon Fraser University, Canada;* Paul Ho, *Simon Fraser University, Canada*

PHY22-3: Joint Tomlinson-Harashima Precoding and Scheduling for Multiuser MIMO with Imperfect Feedback

Quan Zhou, NC State University, USA, Huaiyu Dai, NC State University, USA

PHY22-4: Promising Feedback Methods for Transmit Beamforming in Broadband Mobile OFDM

Timothy A. Thomas, Motorola Labs, USA, Kevin L. Baum, Motorola Labs, USA

WEDNESDAY 5 APRIL 2006
14:00-15:30 ROOM N237

PHY23: CELLULAR NETWORKS

Session Chair: Teck Hu, *Lucent Technologies, US*

PHY23-1: Coexistence Analysis of Bluetooth and Cellular UMTS in the 2500–2690 MHz Band

Markus Konrad, University of Erlangen-Nuremberg, Germany; Wolfgang Koch, University of Erlangen-Nuremberg, Germany; Jörg Huschke, Ericsson GmbH, Germany

PHY23-2: Capacity-based Compressed Mode for Inter-System Handover in UMTS

ChengTa Chang, *National Chiao Tung University, Taiwan;* ChingYao Huang, *National Chiao Tung University, Taiwan*

PHY23-3: Adaptive Frame Switching for UMTS UL-EDCH

Shupeng Li, *Lucent Technologies, USA;* FangChen Cheng, *Lucent Technologies, USA;* Yifei Yuan, *Lucent Technologies, USA;* Teck Hu, *Siemens Communications, USA*

PHY23-4: A Hybrid Method for Channel Assignment Problems in Cellular Radio Networks

Seyed Alireza Ghasempour Shirazi, Hamidreza Amindavar

TUESDAY 4 APRIL 2006
9:00-10:30 ROOM N235

PHY24: CHANNEL MODELING

Session Chair: Jiang Zhou Wang, *University of Kent*

PHY24-1: A New Simulation Model for Mobile-to-Mobile Rayleigh Fading Channels

Alenka G. Zaji, *Georgia Institute of Technology, USA;* Gordon L. Stüber, *Georgia Institute of Technology, USA*

PHYSICAL LAYER

PHY24-2: A Novel Simulation Model With Correct Statistical Properties for Ricean Fading Channels

Rugui Yao, *Northwestern Polytechnical University, China;* Yongsheng Wang, *Northwestern Polytechnical University, China;* Juan Xu, *Northwestern Polytechnical University, China*

PHY24-3: Time Varying Channel Modeling for Ad-hoc Mobile Wireless Networks

M. M. Olama, *University of Tennessee, USA;* S. M. Djouadi, *University of Tennessee, USA;* C. D. Charalambous, *University of Cyprus, Cyprus*

PHY24-4: Model Development for the Wideband Expressway Vehicle-to-Vehicle 2.4 GHz Channel

Guillermo Acosta, *Georgia Institute of Technology, USA;* Mary Ann Ingram, *Georgia Institute of Technology, USA*

THURSDAY 6 APRIL 2006
9:00-10:30 ROOM N238

PHY25: ADAPTIVE MODULATION AND CODING

Session Chair: *TBA*

PHY25-1: Improved AMC Using Adaptive SIR Thresholds in OFDM-based Wireless Systems

Ji-Woong Choi, *Stanford University, USA;* Yong-Hwan Lee, *Seoul National University, Korea*

PHY25-2: Adaptive Modulation and Coding for Turbo Receivers in Space-Time BICM

César Hermosilla, *INRS-EMT, Canada;* Leszek Szczeciski, *INRS-EMT, Canada*

PHY25-3: Joint AMC/ARQ Transmission in Wireless TDMA Systems and Its Performance Analysis

Hong-Chuan Yang, *University of Victoria, Canada;* Sanal Sasankan, *University of Victoria, Canada*

PHY25-4: Throughput Analysis of Band AMC Scheme in Broadband Wireless OFDMA System

Sung Kyung Kim, *Korea University, Korea;* Chung Gu Kang, *Korea University, Korea*

TUESDAY 4 APRIL 2006
16:00-17:30 ROOM N235

PHY26: PRECODER DESIGN

Session Chair: Jinho Choi, *University of New South Wales, AU*

PHY26-1: Non-Orthogonal Precoding Matrix Design for MU-MIMO Downlink Channels

Mingguang Xu, *Tsinghua University, PR China;* Dong Lin, *Tsinghua University, PR China*

PHY26-2: Space-Time Precoding for Asymmetric MIMO Channels

Sumei Sun, *Institute for Infocomm Research, Singapore; National University of Singapore, Singapore;* Ying-Chang Liang, *Institute for Infocomm Research, Singapore;* Tjeng Thiang Tjhung, *Institute for Infocomm Research, Singapore*

PHY26-3: Precoder-aided Iterative Detection Assisted Multilevel Coding and Three-Dimensional EXIT-Chart Analysis

R. Y. S. Tee, *University of Southampton, UK;* S. X. Ng, *University of Southampton, UK;* L. Hanzo, *University of Southampton, UK*

PHY26-4: Precoding for Spatial Multiplexing with MIMO Iterative Receiver

Jinho Choi, *The University of New South Wales, Australia*

WEDNESDAY 5 APRIL 2006
16:00-17:30 ROOM N239

PHY27: PERFORMANCE ANALYSIS – II

Session Chair: Hong-Chuan Yang, *University of Victoria, Canada*

PHY27-1: Performance Analysis of MQAM with MRC over Nakagami-m Fading Channels

Iyad Falujah, *University of Texas at Arlington, USA;* Vasant K. Prabhu, *University of Texas at Arlington, USA*

PHY27-2: Performance of MRC and EGC M-QAM with Imperfect Channel Estimation

Yao Ma, *Iowa State University, USA*

PHY27-3: Threshold-based Hybrid Selection/Maximal-Ratio Combining in Correlated Nakagami Fading

Xiaodi Zhang, *University of Alberta, Canada;* Norman C. Beaulieu, *University of Alberta, Canada*

PHY27-4: Performance Analysis of Output-Threshold Generalized Selection Combining (OT-GSC) over Rayleigh Fading Channels

Le Yang, *University of Victoria, Canada;* Hong-Chuan Yang, *University of Victoria, Canada*

THURSDAY 6 APRIL 2006
11:00-12:30 ROOM N238

PHY28: WIRELESS PERSONAL AREA NETWORKS

Session Chair: Chia-Chin Chong, *Docomo Labs, USA*

PHY28-1: Soft-in/Soft-out Noncoherent Sequence Detection for Bluetooth: Capacity, Error Rate and Throughput Analysis

Rohit Iyer Seshadri, *West Virginia University, USA;* Matthew C. Valenti, *West Virginia University, USA*

PHY28-2: A Practical Approach to Multicasting in Bluetooth Piconets

Lóránt Farkas, Nokia Hungary kft., Hungary; Balázs Bakos, Nokia Hungary kft., Hungary; Péter Spányi, Nokia Hungary kft., Hungary

PHY28-3: WirelessUSB: A Low Power, Low Latency and Interference Immune Wireless Standard

Ryan Woodings, *Cypress Semiconductor, USA;* Manoj Pandey, *Brigham Young University, USA*

PHY28-4: On the Suitability of IrBurst for Large Data Block Exchange over High-Speed IrDA Links

Shawkat Shamim Ara, *Waseda University, Japan;* Alam Mohammad Shah, *Waseda University, Japan;* Mitsuji Matsumoto, *Waseda University, Japan*

TUESDAY 46 APRIL 2006
11:00-12:30 ROOM N237

PHY29: ADVANCED CODING TECHNIQUES – II

Session Chair: Hamid Jafarkhani, *University of California, Irvine, USA*

PHY29-1: Super-Pseudo-Orthogonal Space-Time Trellis Codes

Yun Zhu, *University of California, Irvine, USA;* Hamid Jafarkhani

PHY29-2: Good Low-Rate Convolutional Codes Using Integer Linear Programming

Huiping Li, *Beijing University of Posts and Telecommunications, PR China;* David Huang, *Beijing University of Posts and Telecommunications, PR China*

PHY29-3: Design of Structured eIRA Codes with Applications to Wireless Channels

Yifei Zhang, *University of Arizona, USA;* William E. Ryan, *University of Arizona, USA;* Fei Peng, *University of Arizona, USA*

PHY29-4: Variable Spreading Factor Orthogonal Polyphase Codes for Constant Envelope OFDM-CDMA System

Yingming Tsai, *InterDigital Communications Corp., USA;* Guodong Zhang, *InterDigital Communications Corp., USA;* Xiaodong Wang, *Columbia University, USA*

TUESDAY 4 APRIL 2006
16:00-17:30 ROOM N238

PHY30: 802.11 NETWORKS

Session Chair: Kaoru Sezaki, *University of Tokyo, Japan*

PHY30-1: Link Assessment in an Indoor 802.11 Network

Michael R. Souryal, *National Institute of Standards and Technology, USA;* Luke Klein-Berndt, *National Institute of Standards and Technology, USA;* Leonard E. Miller, *National Institute of Standards and Technology, USA;* Nader Moayeri, *National Institute of Standards and Technology, USA*

PHY30-2: Characterizing Temporal SNR Variation in 802.11 Networks

Ratul K. Guha, *University of Pennsylvania, USA;* Saswati Sarkar, *University of Pennsylvania, USA*

PHY30-3: Performance Analysis of Controlled Access Phase Scheduling Scheme for Per-Session QoS Provisioning in IEEE 802.11e Wireless LANs

Yaser Pourmohammadi Fallah, *University of British Columbia, Canada;* Hussein Alnuweiri, *University of British Columbia, Canada*

PHY30-4: Quick Data Retrieving for U-APSD in IEEE 802.11e WLAN Networks

Shojiro Takeuchi, *Waseda University, Japan;* Kaoru Sezaki, *University of Tokyo, Japan;* Yasuhiko Yasuda, *Waseda University, Japan*

TUESDAY 4 APRIL 2006
16:00-17:30 ROOM N239

PHY31: FREQUENCY, TIMING AND CHANNEL ESTIMATION

Session Chair: Aeman Saad Mohammed, *University of Ulm, Germany*

PHY31-1: Robust Estimation of Carrier-Frequency Offset and Timing Offset for OFDMA Uplink Systems over Multi-path Fading Channels

Pengkai Zhao, *Tsinghua University, PR China;* Zuyao Ni, *Tsinghua University, PR China;* Linling Kuang, *Tsinghua University, PR China;* Jianhua Li, *Tsinghua University, PR China*

PHY31-2: Delay Spread and Time Dispersion Estimation for Adaptive OFDM Systems

Tevfik Yücek, *University of South Florida, USA;* Hüseyin Arslan, *University of South Florida, USA*

PHY31-3: High Accuracy and Low Complexity Timing Offset Estimation for MIMO-OFDM Receivers

Il-Gu Lee, *ETRI, Korea;* Eunyoung Choi, *ETRI, Korea;* Sok-Kyu Lee, *ETRI, Korea;* Taehyun Jeon, *Seoul National University of Technology, Korea*

PHY31-4: SISO-OFDM Channel Estimation in the Presence of Carrier Frequency Offset

Lingfan Weng, *The Hong Kong University of Science and Technology,* Hong Kong; Ross D. Murch, *The Hong Kong University of Science and Technology, Hong Kong;* Vincent K. N. Lau, *The Hong Kong University of Science and Technology, Hong Kong*

THURSDAY 6 APRIL 2006
9:00-10:30 ROOM N239

PHY32: FREQUENCY ESTIMATION

Session Chair: Ahmed Eltawil, *University of California, Irvine, USA*

PHY32-1: Implementation of a Carrier Frequency Recovery Loop for MIMO-CDMA Systems

Hamid Eslami, *University of California, Irvine, USA;* Ahmed M. Eltawil, *University of California, Irvine, USA*

PHY32-2: On the Design of a Common Avenue for Frequency Estimation and Frame Synchronization

Marco Villanti, *University of Bologna, Italy;* Raffaella Pedone, *University of Bologna, Italy;* Matteo Iubatti, *University of Bologna, Italy;* Giovanni E. Corazza, *University of Bologna, Italy*

PHY32-3: Maximum-Likelihood Carrier Frequency Offset Estimation for OFDM Systems in Fading Channels

Hao Zhou, *University of Notre Dame, USA;* Amaresh V. Malipatil, *University of Notre Dame, USA;* Yih-Fang Huang, *University of Notre Dame, USA*

PHY32-4: Carrier Frequency Offset Estimation in qHLRT Modulation Classifier with Antenna Arrays

Hong Li, *New Jersey Institute of Technology, USA;* Ali Abdi, *New Jersey Institute of Technology, USA;* Yeheskel Bar-Ness, *New Jersey Institute of Technology, USA;* Wei Su, *U.S. Army RDECOM CERDEC, USA*

MONDAY 3 APRIL 2006
14:00-15:30 ROOM N235

PHY33: SPACE TIME CODING – I

Session Chair: Yao Ma, *Iowa State University, USA*

PHY33-1: Diversity Analysis of Space-Time Coding in Cascaded Rayleigh Fading Channels

Murat Uysal, *University of Waterloo, Canada*

PHY33-2: System Performance of Distributed Transmit Diversity for OFDM-based 1xEV-DO Broadcast Networks

Young C. Yoon, *Ericsson Inc., USA;* Alpaslan Savas, *Ericsson Inc., USA;* Wanshi Chen, *Ericsson Inc., USA*

PHY33-3: Performance Analysis of Space Time Block Coded Systems over Frequency Selective Rayleigh Fading Channels

Tung X. Lai, *University of Calgary, Canada;* Tuan A. Tran, *McGill University, Canada;* Abu B. Sesay, *University of Calgary, Canada*

PHY33-4: Asymptotic Performance of Space-Time Block Codes over Correlated Rician MIMO Channels

Lei Zhao, *Iowa State University, USA;* Yao Ma, *Iowa State University, USA*

THURSDAY 6 APRIL 2006
11:00-12:30 ROOM N237

PHY34: FADING CHANNELS

Session Chair: Mahmoud Ismail, *The University of Mississippi, USA*

PHY34-1: Approximate SER of H-S/MRC in Correlated Nakagami Fading

Xiaodi Zhang, *University of Alberta, Canada;* Norman C. Beaulieu, *University of Alberta, Canada*

PHYSICAL LAYER

PHY34-2: Bit Error Variances of DPSK and NCFSK in Nakagami-m Channels

Xian Liu, *University of Arkansas at Little Rock, USA*

PHY34-3: Performance Evaluation of Maximal Ratio Combining Diversity over theWeibull Fading Channel in Presence of Co-channel Interference

Mahmoud H. Ismail, *The University of Mississippi, USA;* Mustafa M. Matalgah, *The University of Mississippi, USA*

PHY34-4: General Order Selection Combining for Non-Identically Distributed Nakagami and Weibull Fading Channels

Raymond Kwan, *The University of British Columbia, Canada;* Cyril Leung, *The University of British Columbia, Canada*

THURSDAY 6 APRIL 2006
11:00-12:30 ROOM N239

PHY35: CHANNEL ESTIMATION

Session Chair: Hsiao Chun Wu, *Louisiana State University, USA*

PHY35-1: A Simple Subspace-based Blind Channel Estimation for OFDM Systems

Feifei Gao, *National University of Singapore, Singapore;* A. Nallanathan, *National University of Singapore, Singapore*

PHY35-2: LS FFT-based Channel Estimators Using Pilot-Embedded Data-Bearing Approach in Space-Frequency Coded MIMO-OFDM Systems

Chaiyod Pirak, *University of Maryland, USA; Chulalongkorn University, Thailand;* Z. Jane Wang, University of British Columbia, Canada; K. J. Ray Liu, *University of Maryland, USA;* Somchai Jitapunkul, *Chulalongkorn University, Thailand*

PHY35-3: On Subspace Channel Estimation for Chip-level Space-Time Block Coded Multi-Rate CDMA

Eugene B. Nicolov, *McGill University, Canada;* Shahrokh Nayeb Nazar, *McGill University, Canada;* Ioannis N. Psaromiligkos, *McGill University, Canada*

PHY35-4: New Robust ICI Estimation Using Distributive PM-Sequences in OFDM Systems

Hsiao-Chun Wu, *Louisiana State University, USA;* Songnan Xi, *Louisiana State University, USA;* Yiyan Wu, *Communications Research Centre, Canada*

TUESDAY 4 APRIL 2006
9:00-10:30 ROOM N239

PHY36: ADVANCED RECEIVER TECHNIQUES – I

Session Chair: *TBA*

PHY36-1: A Novel Subspace-based Blind Channel Estimation for Cyclic Prefixed Single-Carrier Transmissions

Feifei Gao, *National University of Singapore, Singapore;* A. Nallanathan, *National University of Singapore, Singapore*

PHY36-2: Joint Turbo Equalization and Channel Estimation with Fixed-Lag Extended Kalman Filtering

Xin Li, *University of Florida, USA;* Tan F. Wong, *University of Florida, USA*

PHY36-3: A Low-Complexity Soft Demapper for OFDM Fading Channels with ICI

Fei Peng, *The University of Arizona, USA;* William E. Ryan, *The University of Arizona, USA*

TUESDAY 4 APRIL 2006
11:00-12:30 ROOM N239

PHY37: ADVANCED RECEIVER TECHNIQUES – II

Session Chair: Jiang Zhou Wang, *University of Kent, UK*

PHY37-1: Soft MCI Cancellation for Turbo-coded OFCDM Systems

Yiqing Zhou, *University of Hong Kong, Hong Kong;* Jiangzhou Wang, *University of Kent, UK*

PHY37-2: A Parallel Receiver Combining Detection and Decoding for Turbo-Coded Multi-Antenna System

Yang Hu, *Beijing University of Posts and Telecommunications, PR China;* Changchuan Yin, *Beijing University of Posts and Telecommunications, PR China;* Guangxin Yue, *Beijing University of Posts and Telecommunications, PR China*

PHY37-3: Adaptive Frequency-Domain Interference Cancellation and Channel Equalizer for MIMO-CP-CDMA Systems

Jing Xu, *Shanghai Institute of Microsystem and Information Technology, and SHRCWC, PR China;* Haifeng Wang, *Nokia, PR China;* Shixin Cheng, *Southeast University, PR China;* Ming Chen, *Southeast University, PR China;* Zhiyong Bu, *Shanghai Institute of Microsystem and Information Technology, and SHRCWC, PR China*

PHY37-4: Single-Carrier Frequency Domain Equalization for Broadband Cooperative Communications

Hakam Mheidat, *University of Waterloo, Canada;* Murat Uysal, *University of Waterloo, Canada;* Naofal Al-Dhahir, *The University of Texas at Dallas, USA*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N233

PHY38: MULTIUSER DETECTION – II

Session Chair: Shou Mui,

PHY38-1: A General Approach Towards Blind Multiuser Detection Using Higher Order Statistics

Malay Gupta, *Southern Methodist University, USA;* Balu Santhanam, *University of New Mexico, USA*

PHY38-2: Successive Interference Cancellation for cdma2000 using a Software Defined Radio

Shou Y. Mui, *Digital Receiver Technology, Inc., USA*

PHY38-3: Bit-Error-Rate Performance Evaluation of SMI-MSINR and SMI-MVDR DS/CDMA Receivers

Otto Fonseca Escudero, *McGill University, Canada;* Ioannis N. Psaromiligkos, *McGill University, Canada*

PHY38-4: Iterative Minimum Bit Error Rate Multiuser Detection in Multiple Antenna Aided OFDM

L. Xu, *University of Southampton, UK;*
S. Tan, *University of Southampton, UK;*
S. Chen, *University of Southampton, UK;*
L. Hanzo, *University of Southampton, UK*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N237

PHY39: ADAPTIVE TRANSMISSION TECHNIQUES - I

Session Chair: Qilian Liang, *University of Texas, Arlington, USA*

PHY39-1: Link Adaptation for MIMO Systems Using Reliability Values

Magnus Sandell, *Toshiba Research Europe Ltd., UK*

PHY39-2: Adaptive Antenna Power Level Control for Wireless Forward Link Data Services

Jung-Tsung Tsai, *National Taiwan Normal University, Taiwan;* Hui-Chen Hsieh, *National Taiwan Normal University, Taiwan*

PHY39-3: A Joint Code/Time Assignment Strategy with Minimal Fragmentations for CDMA Systems

Chih-Min Chao, *National Taiwan Ocean University, Taiwan;* Shih-Han Wang, *Tamkang University, Taiwan*

MONDAY 3 APRIL 2006
16:00-17:30 ROOM N235

PHY40: SPACE TIME CODING – II

Session Chair: Jiang Zhou Wang, *University of Kent, UK*

PHY40-1: Punctured Super-Orthogonal Space-Time Trellis Codes

Yun Zhu, *University of California, Irvine, USA;* Hamid Jafarkhani

PHY40-2: Extended Orthogonal Space-Time Block Codes with Partial Feedback for Wireless Communications

Yi Yu, *ENST Bretagne, France;* Sylvie Kerouedan, *ENST Bretagne, France;* Jinhong Yuan, *The University of New South Wales, Australia*

PHY40-3: Time-Reversal Space-Time Coding for Doubly-Selective Channels

Stefan Geirhofer, *Cornell University, USA;* Lang Tong, *Cornell University, USA;* Anna Scaglione, *Cornell University, USA*

PHY40-4: Efficient Blind Decoding of Orthogonal Space-Time Block Codes over Time-Selective Fading Channels

Tao Cui, *California Institute of Technology, USA;* Chintha Tellambura, *University of Alberta, Canada*

THURSDAY 6 APRIL 2006
14:00-15:30 ROOM N235

PHY41: SPACE TIME CODING – III

Session Chair: Aeman Saad Mohammad, *University of Ulm, Germany*

PHY41-1: Differential Space-Time Modulation Schemes for Smart Antenna Aided Generalized Multicarrier DS-CDMA Systems

Bin Hu, *University of Southampton, UK;* Lie-Liang Yang, *University of Southampton, UK;* Lajos Hanzo, *University of Southampton, UK*

PHY41-2: Space-Time Trellis Code Design over Rapid Rayleigh Fading Channels with Channel Estimation

Yan Li, *National University of Singapore, Singapore;* Pooi Yuen Kam, *National University of Singapore, Singapore*

PHY41-3: Multiple-Symbol Differential Detection for Space-Time Block Codes with Diversity Reception

Ziyan Jia, *Shinshu University, Japan;* Shiro Handa, *Shinshu University, Japan;* Fumihito Sasamori, *Shinshu University, Japan;* Shinjiro Oshita, *Shinshu University, Japan*

PHY41-4: Differential Space-Time Spreading Using Iteratively Detected Sphere Packing Modulation and Two Transmit Antennas

M. El-Hajjar, *University of Southampton, UK;* O. Alamri, *University of Southampton, UK;* L. Hanzo, *University of Southampton, UK*

TUESDAY 4 APRIL 2006
16:00-17:30 ROOM N237

PHY42: COOPERATIVE COMMUNICATIONS – II

Session Chair: Hong-Chuan Yang, *University of Victoria, Canada*

PHY42-1: Matching Algorithms for Infrastructure-based Wireless Networks Employing Cooperative Diversity System

Veluppillai Mahinthan, *University of Waterloo, Canada;* Lin Cai, *University of Victoria, Canada;* Jon W. Mark, *University of Waterloo, Canada;* Xuemin Shen, *University of Waterloo, Canada*

PHY42-2: Power Allocation Strategies in Cooperative MIMO Networks

Haesoo Kim, *Virginia Polytechnic Institute and State University, USA;* R. Michael Buehrer, *Virginia Polytechnic Institute and State University, USA*

PHY42-3: Wireless Diversity through Network Coding

Yingda Chen, *Lehigh University, USA;* Shalinee Kishore, *Lehigh University, USA;* Jing Li, *Lehigh University, USA*

PHY42-4: An Efficient Cooperation Protocol to Extend Coverage Area in Cellular Networks

Ahmed K. Sadek, *University of Maryland, USA;* Zhu Han, *University of Maryland, USA;* K. J. Ray Liu, *University of Maryland, USA*

TUESDAY 4 APRIL 2006
11:00-12:30 ROOM N233

PHY43: SCHEDULING AND MAC METHODS

Session Chair: Peifang Zhang, *University of California, Irvine, USA*

PHY43-1: Optimal Power Control and Opportunistic Fair Scheduling in TH-PPM UWB Ad-hoc Multimedia Networks

Yang Liu, *The University of Hong Kong, Hong Kong;* Yu-Kwong Kwok, *The University of Hong Kong, Hong Kong;* J. Wang, *University of Kent, UK*

PHY43-2: Throughput Guarantee Targeted Hybrid Scheduling for Downlink WCDMA Data Networks

Peifang Zhang, *University of California, Irvine, USA;* Scott Jordan, *University of California, Irvine, USA*

PHY43-3: An Adaptive p-Persistent 802.11 MAC Scheme to Achieve Maximum Channel Throughput and QoS Provisioning

Rose Qingyang Hu, *Mississippi State University, USA;* Wei Zha, *Mississippi State University, USA;* Yi Qian, *University of Puerto Rico at Mayaguez, Puerto Rico;* Yu Cheng, *University of Toronto, Canada*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N237

PHY44: ADAPTIVE TRANSMISSION TECHNIQUES – II

Session Chair: *TBA*

PHY44-1: Multicarrier Energy Allocation for Differentiated QoS Provision and Dynamic Range Reduction

Michael A. Enright, *University of Southern California, USA;* C.-C. Jay Kuo, *University of Southern California, USA*

PHY44-2: Subcarrier and Bit Allocation for OFDMA Systems with Proportional Fairness

Guanding Yu, *Zhejiang University, China;* Zhaoyang Zhang, *Zhejiang University, China*

PHY44-3: Joint Rate and Power Adaptation for Wireless Local Area Networks in Nakagami Fading Channels

Li-Chun Wang, *National Chiao Tung University, Taiwan;* Kuang-Nan Yen, *National Chiao Tung University, Taiwan*

PHYSICAL LAYER

PHY44-4: Bandwidth-Efficient OFDM Cooperative Protocol with Applications to UWB Communications

W. Pam Siriwongpairat, *University of Maryland, USA;* Ahmed K. Sadek, *University of Maryland, USA*

THURSDAY 6 APRIL 2006
11:00-12:30 ROOM N238

PHY45: BEAMFORMING METHODS

Session Chair: *TBA*

PHY45-1: Space-Time Multi-Block Coding and Beamforming with Covariance Beamforming with Side Information for Mobile Transceivers

Siavash Ekbatani, *University of California, Irvine, USA;* Fatemeh Fazel, *University of California, Irvine, USA*

PHY45-2: Linear Beamforming Assisted Receiver for Binary Phase Shift Keying Modulation Systems

S. Chen, *University of Southampton, UK;* S. Tan, *University of Southampton, UK;* L. Hanzo, *University of Southampton, UK*

PHY45-3: A Novel Simplified Opportunistic Beamforming Method for Wide-band Systems

Zhengang Pan, *DoCoMo Beijing Communications Laboratories Co., Ltd., PR China;* Lan Chen, *DoCoMo Beijing Communications Laboratories Co., Ltd., PR China*

PHY45-4: Exploiting Time Coherence in Opportunistic Beamforming for Slow Fading Channels

Iuri R. Baran, *Federal University of Santa Catarina, Brazil;* Bartolomeu F. Uchôa-Filho, *Federal University of Santa Catarina, Brazil*

WEDNESDAY 5 APRIL 2006
14:00-15:30 ROOM N237

PHY46: DETECTION METHODS

Session Chair: *TBA*

PHY46-1: Low Complexity Approximate Log-MAP Detection for MIMO Systems

Jos Akhtman, *University of Southampton, UK;* Lajos Hanzo, *University of Southampton, UK*

PHY46-2: Packet Detection and Acquisition at Low SINR in Spread-Spectrum based Wireless Communications

Manish Amde, *University of California, San Diego, USA;* Joel Marciano, *University of Philippines, Philippines*

PHY46-3: Efficient Signal Detection for Space-Time Block Coding over Time-Selective Fading Channels

Tao Cui, *California Institute of Technology, USA;* Chintha Tellambura, *University of Alberta, Canada*

PHY46-4: Parallel Soft Spherical Detection for Coded MIMO Systems

Hosein Nikopour, *University of Waterloo, Canada;* Amir K. Khandani, *University of Waterloo, Canada*

THURSDAY 6 APRIL 2006
9:00-10:30 ROOM N237

PHY47: CHANNEL MODELING AND IMPLEMENTATION

Session Chair: William Scanlon, *Queen's University, Belfast, UK*

PHY47-1: Indoor Channel Characterisation for a Wearable Antenna Array at 868 MHz

S. L. Cotton, *Queen's University, UK*

PHY47-2: DSP Implementation of an Efficient Bit Allocation Algorithm for Indoor Wireless Multicarrier Systems

Martin Cudnoch, *McGill University, Canada;* Alexander M. Wyglinski

PHY47-3: Transaction Level Analysis of NoC Based Coded MIMO-OFDM Receiver

Sung-Rok Yoon, *Information and Communications University, Korea;* Jin Lee, *Information and Communications University, Korea*

PHY47-4: Applying the Convex Metric and the Spatial Channel Model for HRPD Rev-A

Alfonso Rodriguez-Herrera, *Motorola Labs, USA;* Sean McBeath, *Motorola Labs, USA*

WEDNESDAY 5 APRIL 2006
16:00-17:30 ROOM N237

PHY48: 802.15 NETWORKS AND MIMO

Session Chair: William Scanlon, *Queen's University, Belfast, UK*

PHY48-1: A Cyclic Odd Bit Inversion Code Mapping and Modulation Scheme for the IEEE 802.15.4b 868 MHz Band

Manjeet Singh, *Institute for Infocomm Research, Singapore;* Zhongding Lei, *Institute for Infocomm Research, Singapore*

PHY48-2: Performance Analysis and a Proposed Improvement for the IEEE 802.15.4 Contention Access Period

Zhifeng Tao, *Polytechnic University, USA;* Shivendra Panwar, *Polytechnic University, USA*

PHY48-3: Optimal Training Design for Multiple-Antenna Communications

Qingyu Zhu, *University of Iowa, USA;* Zhiqiang Liu, *University of Iowa, USA*

PHY48-4: Interleaver Design for MIMO-OFDM based Wireless LAN

Huaning Niu, *Samsung Electronics, USA;* Xuemei Ouyang, *Samsung Electronics, USA*

THURSDAY 6 APRIL 2006
9:00-10:30 ROOM N241

PHY49: INTERFERENCE ANALYSIS

Session Chair: Hsiao-Chun Wu, *Louisiana State University, USA*

PHY49-1: Analysis of the Statistical Properties of the Interference in the IEEE 802.16 OFDMA Network

Sergey N. Moiseev, *JSC Kodofon, Russia;* Stanislav A. Filin, *JSC Kodofon, Russia*

PHY49-2: A Novel Method of Estimating Desired Signal to Undesired Signal Power Ratio for One-Cell-Frequency-Reuse SIMO-MIMO-OF/TDMA Systems

Masafumi Moriyama, *National Institute of Information and Communications Technology, and National Police Agency, Japan;* Hiroshi Harada, *National Institute of Information and Communications Technology, Japan*

PHY49-3: Interference Avoidance with Incremental Power Updates for Uplink CDMA Systems

Ca˘ta˘lin La˘ca˘tus, *University of Texas at San Antonio, USA;* Dimitrie C. Popescu, *University of Texas at San Antonio, USA*

PHY49-4: Intercarrier Interference Analysis for Wireless OFDM in Mobile Channels

Xiaozhou Huang, *Louisiana State University, USA;* Hsiao-Chun Wu, *Louisiana State University, USA*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N236

PHY50: MAC PROTOCOLS

Session Chair: *TBA*

PHY50-1: Employing Cooperative Diversity for Performance Enhancement in UWB Communication Systems

W. Pam Siriwongpairat, *University of Maryland, USA;* Weifeng Su, *State University of New York at Buffalo, USA*

PHY50-2: Efficient OFDM-HARQ System Evaluation Using a Recursive EESM Link Error Prediction

Brian Classon, *Motorola Labs, USA;* Philippe Sartori, *Motorola Labs, USA*

PHY50-3: Multiple-Access Design for Ad Hoc UWB Position-Location Networks

Swaroop Venkatesh, *Virginia Polytechnic Institute and State University, USA;* R. Michael Buehrer, *Virginia Polytechnic Institute and State University, USA*

WEDNESDAY 5 APRIL 2006
16:00-17:30 ROOM N235

PHY51: SPACE TIME/SPACE - FREQUENCY CODES

Session Chair: *TBA*

PHY51-1: Optimizing ZF Precoders for MIMO Broadcast Systems

Prashant U. Sripathi, *Purdue University, USA;* James S. Lehnert, *Purdue University, USA*

PHY51-2: Sphere-Packing Modulated Space-Frequency Diversity Aided FFH-assisted DSTBC System

N. Wu, *University of Southampton, UK;* S. Ahmed, *University of Southampton, UK*

PHY51-3: Novel Space-Time-frequency Codes with Improved Distance Spectrum for Mobile Multi-Path Channels

Siavash Ekbatani, *University of California, Irvine, USA;* Hamid Jafarkhani, *University of California, Irvine, USA*

PHY51-4: Tight Error Bound for Coded Unitary Space-Time Modulation

Nghi H. Tran, *University of Saskatchewan, Canada;* Ha H. Nguyen, *University of Saskatchewan, Canada*

WEDNESDAY 5 APRIL 2006
14:00-15:30 ROOM N235

PHY52: SMART ANTENNAS AND MIMO

Session Chair: James Caffrey, *University of Cincinnati, USA*

PHY52-1: Reverse-link Macrodiversity in CDMA Distributed Antenna Systems with Imperfect Channel Estimation

Peng Chen, *Beijing Samsung Telecom, China;* Jing-Xing Fu, *Beijing Samsung Telecom, China*

PHY52-2: Rank-Deficient Dispersive Covariance MIMO Precoders

R. Hayes Jr., *University of Cincinnati, USA;* J. Caffery Jr., *University of Cincinnati, USA*

PHY52-3: Space-Time Adaptive Reduced-Rank Detectors for DS-CDMA Based on Interpolated FIR Filters

Rodrigo C. de Lamare, *CETUC/PUC-RIO, Brazil;* Raimundo Sampaio-Neto, *CETUC/PUC-RIO, Brazil*

PHY52-4: A Smart Antenna with Pre- and Post-FFT Hybrid Domain Beamforming for Broadband OFDM System

Hidehiro Matsuoka, *Toshiba Corporation, Japan;* Hideo Kasami, *Toshiba Corporation, Japan*

WEDNESDAY 5 APRIL 2006
14:00-15:30 ROOM N241

PHY53: MODULATION AND TRAFFIC MODELS

Session Chair: Wookwon Lee, *University of Arkansas, USA*

PHY53-1: Improvement on Power Efficiency of MPSK by Employing Elliptical Signals

Chunyi Song, *Waseda University, Japan;* Shigeru Shimamoto, *Waseda University, Japan*

PHY53-2: Performance of Coded Residual Arithmetic Differential MPSK Modulation

Roseline N. Akol, *University of KwaZulu-Natal, South Africa;* Fambirai Takawira, *University of KwaZulu-Natal, South Africa*

PHY53-3: On Use of Traditional M/G/1 Model for IEEE 802.11 DCF in Unsaturated Traffic Conditions

Wookwon Lee, *University of Arkansas, USA;* Chonggang Wang, *University of Arkansas, USA*

PHY53-4: An Analytical Model of MAC Access Delay in IEEE 802.11e EDCA

Dongxia Xu, *The University of Melbourne, Australia;* Taka Sakurai, *The University of Melbourne, Australia*

WEDNESDAY 5 APRIL 2006
16:00-17:30 ROOM N238

PHY54: CELLULAR SYSTEMS AND FADING CHANNELS

Session Chair: *TBA*

PHY54-1: Performance Bounds for Correlated Turbulent Free-Space Optical Channels

Seyed Mohammad Navidpour, *The Pennsylvania State University, USA;* Murat Uysal, *University of Waterloo, Canada*

PHY54-2: Single-Cell Cluster for High Capacity Narrowband Cellular Systems

Shirin Karimifar, *Simon Fraser University, Canada;* James K. Cavers, Simon Fraser *University, Canada*

PHY54-3: Teletraffic Analysis of Access and Transmission Rate Fairness in EGPRS Networks

Remberto Sandoval-Aréchiga, *UAZ, Mexico;* Felipe A. Cruz-Pérez, *CINVESTAV-IPN, Mexico*

PHY54-4: Maximum Transmission Distance of Geographic Transmissions on Rayleigh Channels

Tathagata D. Goswami, *University of Florida, USA;* John M. Shea, *University of Florida, USA*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N235

PHY55: ADVANCED CODING TECHNIQUES – III

Session Chair: Qilian Liang, *University of Texas, Arlington, USA*

PHY55-1: Effects of Impulse Noise on the Performance of Multidimensional Parity Check Codes

SaiRamesh Nammi, *New Mexico State University, USA;* Deva K. Borah, *New Mexico State University, USA*

PHY55-2: Channel Coding and Interleaver for Secure Wireless Sensor Networks

Qilian Liang, *University of Texas at Arlington, USA;* Lingming Wang, *University of Texas at Arlington, USA*

PHYSICAL LAYER

PHY55-3: Superposition Coding in the Downlink of CDMA Cellular Systems

Sureness Bopping, *University of Florida, USA;* John M. Shea, *University of Florida, USA*

PHY55-4: Distributed Coding for Multiple Access Communication with Side Information

Virendra K. Varshneya, *Indian Institute of Science, India;* Vinod Sharma, *Indian Institute of Science, India*

MONDAY 3 APRIL 2006
16:00-17:30 ROOM N239

PHY56: OFDM SYSTEMS – II

Session Chair: Alireza Seyedi, *Philips Research North America, USA*

PHY56-1: Near-Optimum Nonlinear Soft Detection for Multiple-Antenna Assisted OFDM

M. Jiang, *University of Southampton, UK;* J. Akhtman, *University of Southampton, UK*

PHY56-2: Transmitter Diversity in SDMA-based Asynchronous Multi-User OFDM Systems

Hyejung Jung, *Purdue University, USA;* Michael D. Zoltowski, *Purdue University, USA*

PHY56-3: An Efficient Encodable/Decodable OFDM Low PMEPR 16-QAM Code

Karen Guan, *UIUC, USA;* Chi Guan, *MIT, USA*

PHY56-4: Novel Low-Complexity Post-IFFT PAPR Reduction Technique for OFDM Systems

Lin Yang, *The University of Manchester, UK,* Emad Alsusa, *The University of Manchester, UK*

WEDNESDAY 5 APRIL 2006
16:00-17:30 ROOM N241

PHY57: CDMA SYSTEMS – II

Session Chair: Zhenning Shi, *National ICT Australia, AU*

PHY57-1: Low-Complexity Partitioned-Spreading CDMA System with Multistage MMSE Reception

Zhenning Shi, *Australian National University, Australia;* Mark C. Reed, *Australian National University, Australia*

PHY57-2: A Novel MC DS-CDMA System Scheme with High Spectral Efficiency

Deshan Miao, *Beijing University of Posts and Telecommunications, China;* Daoben Li, *Beijing University of Posts and Telecommunications, China*

PHY57-3: A Bandwidth Efficient MC-CDMA Transmission Scheme in 1xEV-DV System

Chanho Yoon, *ETRI, Korea;* Sok-Kyu Lee, *ETRI, Korea*

PHY57-4: Performance Analysis of the MVDR Channel Estimator for Space-Frequency Block Coded MC-CDMA Systems

Shahrokh Nayeb Nazar, *McGill University, Canada;* Ioannis N. Psaromiligkos, *McGill University, Canada*

TUESDAY 4 APRIL 2006
11:00-12:30 ROOM N235

PHY58: MULTIPLE ANTENNA TECHNOLOGY

Session Chair: Brett Walkenhorst,

PHY58-1: Investigation into MU-MISO Transmission with Limited Feedback

Cheng Wang, *The Hong Kong University of Science & Technology, Hong Kong;* Ross D. Murch, *The Hong Kong University of Science & Technology, Hong Kong*

PHY58-2: Antenna Down-Selection for Co-Channel Interference Mitigation in a Non-LOS Mobile-to-Mobile Channel

Brett T. Walkenhorst, *Georgia Institute of Technology, USA;* Thomas G. Pratt, *Georgia Institute of Technology, USA*

PHY58-3: Achieving Full Spatial Multiplexing and Full Diversity in Wireless Communications

Enis Akay, *University of California, Irvine, USA;* Ersin Sengul, *University of California, Irvine, USA*

PHY58-4: Effect of Directional Antennas on Spatiotemporal Sampling in Clustered Sensor Networks

Qingjiang Tian, *Purdue University, USA;* Seema Bandyopadhyay, *University of Central Florida, USA*

THURSDAY 6 APRIL 2006
14:00-15:30 ROOM N239

PHY59: PERFORMANCE ANALYSIS – III

Session Chair: Syed Ali Jafar, University of California, Irvine, US

PHY59-1: Upper Bound on Bit Error Rate for Time Synchronization Errors in Band-limited Distributed MIMO Networks

Ramesh Chembil Palat, *Virginia Polytechnic Institute and State University, USA;* A. Annamalai, *Virginia Polytechnic Institute and State University, USA*

PHY59-2: Performance Analysis of Steiner System Design-based Noncoherent M-ary Orthogonal Signals with Diversity Combining over Nonidentically Distributed and Arbitrarily Correlated Fading Channels

Redha M. Radaydeh, *The University of Mississippi, USA;* Mustafa M. Matalgah, The University of Mississippi, USA

PHY59-3: Comparison of Compand-Filter Schemes for Reducing PAPR in OFDM

N. Chaudhary, *University of Mississippi, USA*

PHY59-4: Performance of Optimum Combining with Imperfect Channel Estimates

Amir Ali Basri, *University of Toronto, Canada;* Teng Joon Lim, *University of Toronto, Canada*

THURSDAY 6 APRIL 2006
14:00-15:30 ROOM N238

PHY60: WIRELESS COMMUNICATIONS – I

Session Chair: Yeheskel (Zeke) Bar-Ness, *New Jersey Institute of Technology*

PHY60-1: Multilevel Type-II HARQ with Adaptive Modulation Control

R. Bosisio, *Politecnico di Milano, Italy;* U. Spagnolini, *Politecnico di Milano, Italy*

PHY60-2: Performance of VoIP in HSDPA Based on an Adaptive Power Allocation Scheme

Young Ik Seo, *Korea Advanced Institute of Science and Technology, Korea;* Dan Keun Sung, *Korea Advanced Institute of Science and Technology, Korea*

PHY60-3: Robust Automatic Modulation Classification Using Cumulant Features in the Presence of Fading Channels

Songnan Xi, *Louisiana State University, USA;* Hsiao-Chun Wu, *Louisiana State University, USA*

PHY60-4: An Efficient Broadcast MAC Scheme for Traffic Safety Applications in Automotive Networks

Arash T. Toyserkani, *Chalmers University of Technology, Sweden;* Erik G. Ström, *Chalmers University of Technology, Sweden*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N239

PHY61: MAC PROTOCOLS

Session Chair: Kamran Kiasaleh, *University of Texas at Dallas, USA*

PHY61-1: Reverse Link Erlang Capacity of OFDMA Wireless Systems with Adaptive Resource Allocation

Beilei Zhang, *University of Texas at Dallas, USA;* Ramesh Iyer, *University of Texas at Dallas, USA*

PHY61-2: A Fading-Insensitive Performance Metric for a Unified Link Quality Model

Lei Wan, *Ericsson (China) Co. Ltd., China;* Shiauhe Tsai, *Ericsson Inc., USA*

PHY61-3: Performance Analysis of Differential Receivers in Synchronous Shared Environments

Marco Di Renzo, *University of L'Aquila, Italy;* Fabio Graziosi, *University of L'Aquila, Italy*

PHY61-4: Sensitivity of Single-Carrier QAM Systems to Phase Noise Arising from the Hot-Carrier Effect

Sameer R. Herlekar, *Louisiana State University, USA;* Hsiao-Chun Wu, *Louisiana State University, USA*

THURSDAY 6 APRIL 2006
16:00-17:30 ROOM N238

PHY62: WIRELESS COMMUNICATIONS – II

Session Chair: Syed Ali Jafar, *University of California, Irvine, USA*

PHY62-1: Partially Coherent Detection in Rapidly Time Varying Channels

Krishna Srikanth Gomadam, *University of California–Irvine, USA;* Syed Ali Jafar, *University of California–Irvine, USA*

PHY62-2: Generating Multiplicative Pseudo-Noise Codes to Support Multiple Data Rates

Ryan Woodings, *Cypress Semiconductor, USA;* Manoj Pandey, *Brigham Young University, USA*

PHY62-3: Joint Demapping and Source Decoding for Multilevel Modulation

J. C. Serrato, *The University of Leeds, UK;* T. O'Farrell, *The University of Leeds, UK*

PHY62-4: Different Known Guard Intervals for Single-/Multi-Carrier Transceiver

Wei Li, *Southeast University, PR China;* Chen Ming, *Southeast University, PR China*