

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Faculty Publications in Computer & Electronics Engineering (to 2015)    Electrical & Computer Engineering, Department of

---

9-2009

## Program of the 3rd International Conference on Signal Processing and Communication Systems, Omaha, Nebraska, 28-30 September 2009

Follow this and additional works at: <https://digitalcommons.unl.edu/computerelectronicfacpub>



Part of the [Computer Engineering Commons](#)

---

"Program of the 3rd International Conference on Signal Processing and Communication Systems, Omaha, Nebraska, 28-30 September 2009" (2009). *Faculty Publications in Computer & Electronics Engineering (to 2015)*. 63.

<https://digitalcommons.unl.edu/computerelectronicfacpub/63>

This Article is brought to you for free and open access by the Electrical & Computer Engineering, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Faculty Publications in Computer & Electronics Engineering (to 2015) by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# **Program of the 3<sup>rd</sup> International Conference on Signal Processing and Communication Systems**

**Omaha, Nebraska, 28-30 September 2009**

## **Monday, 28 September 2009**

8:00 a.m. – 9:00 a.m.	<i>Registration</i>
9:00 a.m. – 9:05 a.m.	<b>Official Opening</b>
9:05 a.m. – 10:30 a.m.	<b>Session 1 – Communication Theory and Techniques 1</b>
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>
11:00 a.m. – 12:30 p.m.	<b>Session 2 – DSP Algorithms and Hardware Implementations</b>
12:30 p.m. – 1:30 p.m.	<i>Lunch</i>
1:30 p.m. – 3:00 p.m.	<b>Session 3 – Signal Processing for Multimedia 1</b>
3:00 p.m. – 3:30 p.m.	<i>Coffee Break</i>
3:30 p.m. – 5:00 p.m.	<b>Session 4 – Wireless Networking 1</b>
6:00 p.m. – 7:00 p.m.	<i>Cocktail Reception</i>

---

## **Tuesday, 29 September 2009**

9:00 a.m. – 10:30 a.m.	<b>Session 5 – Signal Processing for Multimedia 2</b>
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>
11:00 a.m. – 12:30 p.m.	<b>Session 6 – Communication Theory and Techniques 2</b>
12:30 p.m. – 1:30 p.m.	<i>Lunch</i>
1:30 p.m. – 3:30 p.m.	<b>Poster Session 1 – Signal Processing</b>
3:00 p.m. – 3:30 p.m.	<i>Coffee Break</i>
3:30 p.m. – 5:00 p.m.	<b>Poster Session 2 – Communication Systems</b>
7:00 p.m. – 11:00 p.m.	<i>Banquet</i>

---

## **Wednesday, 30 September 2009**

9:00 a.m. – 10:30 a.m.	<b>Session 7 – Wireless Networking 2</b>
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>
11:00 a.m. – 12:30 p.m.	<b>Session 8 - Communication Theory and Techniques 3</b>
12:30 p.m. – 1:30 p.m.	<i>Lunch</i>
1:30 p.m. – 3:00 p.m.	<b>Session 9 – Communication Theory and Techniques 4</b>
3:00 p.m. – 3:30 p.m.	<i>Coffee Break</i>
3:30 p.m. – 5:00 p.m.	<b>Session 10 – Information Security and Networking</b>

**End of the Conference**

## Session 1 – Communication Theory and Techniques 1

**Chair: Prof. Tadeusz A Wysocki**

1. Opening Address – *Dr Michael McGinnis, The Executive Director, Peter Kiewit Institute*
2. Frequency-Domain Parallel Multiuser Detection for Quasi-Constant Envelope OQPSK Schemes with High Spectral Efficiency, *Miguel Luzio, FCT-Universidade Nova de Lisboa; Rui Dinis, Universidade Nova de Lisboa; Paulo Carvalho, FCT- Universidade Nova de Lisboa*
3. Novel MMSE Precoder and Decoder Designs Subject to Per-antenna Power Constraint for Uplink Multiuser MIMO Systems, *I-Tai Lu, Polytechnic University; Jialing Li, Enoch Lu, Polytechnic Institute of New York University*
4. SFBC Assisted IQ Imbalance Estimation and Compensation in MIMO-OFDM Systems, *Jiang Chang, Polytechnic Institute of New York University; I-Tai Lu, Polytechnic University; Shahrokh Nayeb Nazar, InterDigital Communications, LLC; Afshin Haghighat, InterDigital Communications Corporation*

## Session 2 – DSP Algorithms and Hardware Implementations

**Chair: Dr Peter Vial**

1. Automatic Detection of Premature Ventricular Contraction Beat Using Morphological Transformation and Cross-correlation, *Shamsun Nahar, United International University*
2. Effects of Additional Independent Noise in Binary Composite Hypothesis-Testing Problems, *Suat Bayram, Sinan Gezici, Bilkent University*
3. Noise-Enhanced M-ary Hypothesis-Testing in the Minimax Framework, *Suat Bayram, Sinan Gezici, Bilkent University*
4. Band-limited Signal Concentration in Time-frequency, *Liyang Wei, Australian National University; Rodney A. Kennedy, Tharaka Anuradha Lamahewa, The Australian National University*

## Session 3 – Signal Processing for Multimedia 1

**Chair: Prof. Jerzy Lopatka**

1. Blind Motion-Blur Parameter Estimation Using Edge Detectors, *Robert Grou-Szabo, Tadashi Shibata, The University of Tokyo*
2. Digit-Writing Hand Gesture Recognition by Hand-Held Camera Motion Analysis, *Jia Hao, University of Tokyo; Tadashi Shibata, The University of Tokyo*
3. Image Registration Based on Multi-Scale SIFT for Remote Sensing Images, *Ibrahim El rube', Arab Academy for Science and Technology; Maha Sharkas, Ashor Salem, Arab Academy for Science & Technology*
4. Power Consumption and Performance Analysis of Object Tracking and Event Detection with Wireless Embedded Smart Cameras, *Mauricio Casares, University of Nebraska-Lincoln; Alvaro, Pinto; Youlu Wang, University of Nebraska-Lincoln; Senem Velipasalar, University of Nebraska Lincoln*

## Session 4 – Wireless Networking 1

**Chair: Prof. Hans-Jürgen Zepernick**

1. Channel estimation for a Mobile Terminal in a Multi-Standard Environment (LTE and DVB-H), *Farzad Foroughi Abari, Johan Löfgren, Ove Edfors, Lund University*
2. Consensus-Based Distributed Detection Algorithm in Wireless Ad Hoc Networks, *Gang Xiong, Shaline Kishore, Lehigh University*
3. ConverSS: A Hybrid MAC/Routing Solution for Small-Scale, Convergecast Wireless Networks, *Clement Kam, University of California, San Diego; Curt Schurgers, University of California*
4. On Spatial Patterns of Transmitter-Receiver Pairs that Allow for Interference Alignment by Delay, *Rudolf Mathar, Georg Boecherer, RWTH Aachen University*

## Session 5 - Signal Processing for Multimedia 2

**Chair: Dr Tharaka Anuradha Lamahewa**

1. Keynote Address – Polarization Diversity for Indoor Wireless Communications, Tadeusz A Wysocki, University of Nebraska – Lincoln
2. A Gesture Perception Algorithm Using Compact One-Dimensional Representation of Spatio-Temporal Motion-Field Patches, Ruihan Bao, University of Tokyo; Tadashi Shibata, The University of Tokyo
3. Voice Analysis for Detection of Hoarseness Due to a Local Anesthetic Procedure, Hamid GholamHosseini, Auckland University of Technology; Yu Wei, Chongqing University; Andrew Cameron, Middlemore Hospital; Michael J. Harrison, University of Auckland; Ahmed Al-Jumaily, Auckland University of Technology
4. Vowel Recognition from Articulatory Position Time-Series Data, Jun Wang, Ashok Samal, Jordan R. Green, Tom D. Carrell, University of Nebraska-Lincoln

## Session 6 – Communication Theory and Techniques 2

**Chair: Prof. Peter Farkas**

1. A Novel Full-Three-Dimensional MIMO Mobile-to-Mobile Channel Reference Model, Gholamreza Bakhshi, Yazd University; Kamal Shahtalebi, University of Isfahan; Hamidreza Saligheh Rad, University of Pennsylvania
2. Bit rate maximization for LP-OFDM with noisy channel estimation, Fahad Syed Muhammad, Institute of Electronics and Telecommunications of Rennes (IETR); Jean-Yves Baudais, IETR; Jean-Francois Helard, INSA Rennes
3. Communication Techniques for Wireless Sensor Networks using Distributed Universal Compaction Algorithms, Peter Farkas, Slovak Technical University; Filip Halčin, Slovak University of Technology
4. On the use of TCH sequences for Synchronization, Channel and Noise, João C. Silva, Instituto Superior Técnico/I.T.; Rui Dinis, IST, Tech. Univ. of Lisbon; Nuno Souto, ISCTE/Instituto de Telecomunicações
5. A simplified bi-state channel model for radio propagation in LMSS, Raffat Khan, The University of Texas at Dallas; Kamran Kiasaleh, University of Texas at Dallas

## Session 7 – Wireless Networking 2

**Chair: Prof Rudolf Mathar**

1. Energy-efficient, Flow-specific Medium Access using Preamble Sampling, Owens Walker, Murali Tummala, John McEachen, Naval Postgraduate School
2. Portfolio Selection Based Power Allocation in OFDM Cognitive Radio Networks, Tad Wysocki, Abbas Jamalipour, University of Sydney
3. Power Aware Scheduling for Adhoc Sensor Network Nodes, Ankit Thakkar, Dr. S.N. Pradhan, Nirma University
4. Power Efficiency of Cooperative Communication in Wireless Sensor Networks, Sunita Gupta, Mehmet C. Vuran, M. Cenk Gursoy, University of Nebraska-Lincoln
5. Effect of Sample Timing on LSE Channel Estimation, Jason Uher, Tadeusz A Wysocki, Beata J Wysocki, University of Nebraska-Lincoln

## Session 8 - Communication Theory and Techniques 3

**Chair: Dr Won Mee Jang**

1. A Model for Virtual Physical Layer Communication over Deployed Wireless Sensor Networks, Thomas Childers, Yow Thiam Poh, Naval Postgraduate School; John McEachen, Murali Tummala, Naval Postgraduate School
2. Low Complexity Digital Clock Recovery Algorithm for Implementation in Software-Defined Radios, Ali Montazeri, Kamran Kiasaleh, University of Texas at Dallas
3. Novel Cooperative Communication Schemes for Space-Time-Frequency Coded MB-OFDM UWB, Le Chung Tran, University of Wollongong; Alfred Mertins, University of Luebeck; Xiaojing Huang, CSIRO ICT Centre; Eryk Dutkiewicz, Macquarie University
4. Performance of Dual-Branch Diversity Receiver based SR-ARQ, Ghaida AL-Suhail, University of Basrah, Computer Engineering Department; Tharaka Anuradha Lamahewa, Rodney A. Kennedy, The Australian National University

5. On the Issue of Decoupled Decoding of Codes Derived from Quaternion Orthogonal Designs, *Beata J Wysocki, Tadeusz A Wysocki, University of Nebraska – Lincoln; Sarah Spence Adams, Franklin W. Olin College of Engineering*

## Session 9 – Communication Theory and Techniques 4

**Chair: Prof. John McEachen**

1. Pre-filtering of Self-Encoded Spread Spectrum in Dense Multipath Channels, *Won Mee Jang, Lim Nguyen, University of Nebraska-Lincoln*
2. Prefix Design for TDS-OFDM Supporting Frequency Domain Multiple Access, *Yiqing Zhou, Hong Kong Applied Science and Technology Institute; Zhengang Pan, Henry H. Ye, Hong Kong Applied Science and Technology Institute Corp.*
3. Equalization for Non-Coherent UWB Systems with Approximate Semi-Definite Programming, *Xudong Ma, FlexRealm Silicon Inc.*
4. SC-FDE with Soft Packet Combining ARQ Techniques for Interference-Limited UWB Systems, *Rui Dinis, Universidade Nova de Lisboa; Paulo Carvalho, FCT- Universidade Nova de Lisboa*
5. Properties of Ambiguity Functions for Weighted Pulse Trains with Oppermann Sequences, *Momin Jamil, Harman/Becker Automotive Systems GmbH; Hans-Jürgen Zepernick, Mats I. Pettersson, Blekinge Institute of Technology*

## Session 10 – Information Security and Networking

**Chair: Prof. Tadeusz A Wysocki**

1. Passive Analysis of Non-cooperative GSM Signals, *Pawel Skokowski, Military University of Technology; Krzysztof Kanciak, Military university of Technology; Jerzy Lopatka, Military University of Technology*
2. Physical Layer Security with Artificial Noise: Secrecy Capacity and Optimal Power Allocation, *Xiangyun Zhou, The Australian National University; Matthew McKay, University of Science and Technology*
3. Chaotic Particle Swarm Optimization for Dynamic Routing and Wavelength Assignment in All-Optical WDM Networks, *Ali Hassan, Queen Mary, University of London*
4. A Node-Disjoint Multi-path Extension of the Location Prediction Based Routing Protocol for Mobile Ad hoc Networks, *Natarajan Meghanathan, Jackson State University*

## Poster Session 1 – Signal Processing

1. Scalable Environmental Sounds Analysis, *Konstantin Biatov, Fraunhofer IAIS*
2. Random-Valued Impulse Noise Detector for Switching Median Filters Using Edge Detectors, *Robert Grou-Szabo, Tadashi Shibata, The University of Tokyo*
3. Modeling of Adaptive Wireless Link for MPEG-4 Video Transport in UMTS Network, *Ghaida AL-Suhail, University of Basrah, Computer Engineering Department; Rodney A. Kennedy, The Australian National University, Canberra, Australia*
4. Designing an Audio Channel for Low-bandwidth Mobile Optical Networks, *Samer Shammaa, Robert C. Huck, Pramode Verma, University of Oklahoma*
5. An Invisible Hyperlink Marker, *Koichi Kamijo, IBM*
6. Adaptive Inter-Frame Interleaving for Cross-Layer Diversity Techniques in Multimedia Transmission, *Laura Toni, Lorenzo Rossi, Jean-Guy Fontaine, Italian Institute of Technology (IIT)*
7. EM based Multiuser Detection for STBC-MC-CDMA Communication Systems, *Mehrad Mehrkam, University of Shiraz*
8. DSP Implementation of a DRPTM -Based Low Cost Software-Defined Emergency Radio, *Gaurav Sureka, Kamran Kiasaleh, University of Texas at Dallas*
9. On Non-blind Image Restoration, *Pradeepa D. Samarasinghe, Rodney A. Kennedy, The Australian National University; Hongdong Li, National ICT Australia*

## Poster Session 2 – Communication Systems

1. A Fast Constant-Modulus Algorithm for Carrier Frequency Offset Estimation in OFDM Systems with Continuous Active Subcarriers, *Qi Cheng, University of Western Sydney*
2. A Multi-Band IR-UWB HDR Transceiver: Architecture and Indoor Channel Measurements, *Mohamad Mroue, SUPELEC; Stephane Mallegol, THALES; Sylvain Haese, INSA Rennes; Ghais El Zein, IETR/INSA de Rennes; Alexis Bisiaux, RENESAS DESIGN; Stephane Paquelet, RENESAS DESIGN FRANCE*
3. Analytical Characterization of Nonlinearly Distorted TC-OQAM Signals, *Paulo Carvalho, FCT-Universidade Nova de Lisboa; Rui Dinis, IST, Tech. Univ. of Lisbon; Miguel Luzio, FCT-Universidade Nova de Lisboa*
4. Comparison of Alamouti and STS implementations using a Software Defined Radio Test Bed, *Montserrat Ros, Peter Vial, University of Wollongong*
5. Ergodic Capacity of Cooperative Networks using Adaptive Transmission and Selection Combining, *Vo Nguyen Quoc Bao, University of Ulsan; Trung Q. Duong, Blekinge Institute of Technology; Nam Tran Nguyen, University of Nebraska-Lincoln*
6. Experimental Evaluation on UWB Aggregation and Coexistence, *Huan-Bang Li, Kenichi Takizawa, Kiyoshi Hamaguchi, Masahiro Toyoda, NICT*
7. Line Coded Modulation: One Binary One Ternary Phase Shift Keying (1B1TPSK), *Bahman Alyaei, Air University; Abdullatif Glass, TSI, Abu-Dhabi, UAE*
8. UWB Digital Carrier User Codes for Narrow Band Interference Cancellation, *Paulo Carvalho, FCT-Universidade Nova de Lisboa; Rui Dinis, IST, Tech. Univ. of Lisbon; Diogo Lourenço, FCT- Universidade Nova de Lisboa*
9. On the Overlay of CDMA 1xEVDO System, *Josefina Castañeda, Hebert Harif Ortiz, José Antonio Avendaño, Benemérita Universidad Autónoma de Puebla*
10. A Security Domain isolation and data exchange system Based on VMM, *DongGuiShan, School of Computer, UESTC in ChengDu, China; Liu ZhengJun, Zhao Dong, Westone ltd of CETC No. 30th Group, ChengDu, China*
11. A Fast Authentic Handover Scheme for WLAN-3GPP Interworking Network, *Wendy Wu, Zhangdui Zhong, Hailong Huang, Beijing Jiaotong University*