



MOBIHOC 2009

mobile ad hoc networking and computing



New Orleans
Louisiana
May 18-21, 2009



MobiHoc 2009 Technical Program May 18-21

Monday, May 18

7:30 AM – 9:00 AM	Registration and Check-In	<i>Vieux Carre Foyer</i>
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8:30 AM - 12:15 PM	Workshops
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Foundations of Wireless Ad Hoc & Sensor Networking and Computing (FOWANC)	
Ivan Stojmenovic (University of Ottawa, Canada); Ding-Zhu Du (University of Texas at Dallas, USA); Yu Wang (University of North Carolina at Charlotte, USA); Yingshu Li (Georgia State University, USA)	<i>Fulton Street Room 2</i>

Medical-grade Wireless Networks (WiMD 2009)	
Jie Wu (Florida Atlantic University, USA); Rong Zheng (University of Houston, USA); Xue Liu; (McGill University, Canada)	<i>Fulton Street Room 1</i>

Mobihoc Wireless S3 Workshop 2009	
Mung Chiang (Princeton University, USA); Romit Roy Choudhury (Duke University, USA); Joseph Camp (Rice University, USA); Prashanth Hande (Princeton University, USA)	<i>VCB Salon I</i>

11:45 AM - 1:30 PM	Lunch, FOWANC & WiMD	<i>VCB Salon II</i>
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12:30 PM – 2:00 PM	Lunch, S^3	<i>VCB Salon I</i>
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3:30 PM - 4:00 PM	Break	<i>Vieux Carre Foyer</i>
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5:30 PM - 6:00 PM	Walk to Preservation Hall
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6:00 PM - 7:30 PM	Welcoming Reception at Preservation Hall
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Tuesday, May 19

7:30 AM - 8:30 AM	Continental Breakfast Registration and Check-In	<i>Fulton Street Rooms Vieux Carre Foyer</i>
8:30 AM - 8:45 AM	Opening Remarks	<i>VCB Salon II</i>
8:45 AM - 9:45 AM	Keynote, "Software Defined Mobile Networks" Nick McKeown, Stanford University	
9:45 AM - 10:15 AM	Break	<i>Vieux Carre Foyer</i>
10:15 AM - 12:15 PM	Session 1: Spectrum Allocation and Management <i>VCB Salon II</i> <i>Session Chair: Xinbing Wang (Shanghai Jiaotong University, China)</i>	
	Revenue Generation for Truthful Spectrum Auction in Dynamic Spectrum Access Juncheng Jia, Qian Zhang, Qin Zhang (Hong Kong University of Science and Technology, HK); Mingyan Liu (University of Michigan, US)	
	Spectrum Auction Framework for Access Allocation in Cognitive Radio Networks Gaurav Kasbekar, Saswati Sarkar (University of Pennsylvania, US)	
	Stackelberg Game for Utility-Based Cooperative Cognitive Radio Networks Jin Zhang, Qian Zhang (Hong Kong University of Science and Technology, HK)	
	Efficient Resource Management in OFDMA Femto Cells Karthikeyan Sundaresan, Sampath Rangarajan (NEC Labs America, USA)	
12:15 PM - 1:30 PM	Lunch	<i>Fulton Street Promenade</i>
1:30 PM - 3:30 PM	Session 2: Scheduling in Wireless Networks (I) <i>VCB Salon II</i> <i>Session Chair: Xiuzhen Cheng (George Washington University, USA)</i>	
	On Performance Optimization for Multi-Carrier MIMO Ad Hoc Networks Jia Liu, Thomas Hou, Yi Shi, Hanif Sherali (Virginia Tech, USA)	
	Delay and Effective Throughput of Wireless Scheduling in Heavy Traffic Regimes: Vacation Model for Complexity Yung Yi (KAIST, KR), Junshan Zhang (Arizona State University, USA), Mung Chiang (Princeton University, USA)	
	A Refined Performance Characterization of Longest-Queue-First Policy in Wireless Networks Bo Li, Cem Boyaci, Ye Xia (University of Florida, USA)	
	Scheduling with Limited Information in Wireless Systems Prasanna Chaporkar (IIT Bombay, IN), Alexandre Proutiere (Microsoft Research, UK), Himanshu Asnani, Abhay Karandikar (IIT Bombay, IN)	
3:30 PM - 4:00 PM	Break	<i>Vieux Carre Foyer</i>

4:00 PM - 6:00 PM

Session 3: Routing and Mobility

VCB Salon II

Session Chair: Roy Friedman (Technion – Israel Institute of Technology)

Multiflows in Multihop Wireless Networks

Peng-Jun Wan (Illinois Institute of Technology, USA)

Predict and Relay: An Efficient Routing in Disruption-Tolerant Networks

Quan Yuan, Ionut Cardei, Jie Wu (Florida Atlantic University, USA)

An Optimal Probabilistic Forwarding Protocol in Delay Tolerant Networks

Cong Liu, Jie Wu (Florida Atlantic University, USA)

Aging Rules: What Does the Past Tell About the Future in Mobile Ad-Hoc Networks?

Han Cai, Do Young Eun (North Carolina State University, USA)

6:00 PM - 7:15 PM

**Demos / Posters
Reception**

*Vieux Carre Foyer
Fulton Street Rooms*

Wednesday, May 20

7:30 AM - 8:30 AM	Continental Breakfast N² Women's Breakfast Registration and Check-In	<i>Fulton Street I & II</i> <i>Fulton Street Room III</i> <i>Vieux Carre Foyer</i>
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8:30 AM - 10:30 AM	Session 4: Sensor Coverage and Monitoring <i>VCB Salon II</i> <i>Session Chair: Yanchao Zhang (New Jersey Institute of Technology, USA)</i>
	Fault Tolerant Target Tracking in Sensor Networks Min Ding, Xiuzhen Cheng (George Washington University, USA)
	Fine-Grained Boundary Recognition in Wireless Ad Hoc and Sensor Networks by Topological Methods Dezun Dong (National University of Defense Technology, CN), Yunhao Liu (Hong Kong University of Science and Technology, HK), Liao XiangKe (National University of Defense Technology, CN)
	Low-Connectivity and Full-Coverage Three Dimensional Wireless Sensor Networks Xiaole Bai (The Ohio State University, USA), Chuanlin Zhang (Jinan University, CN), Jin Teng (Shanghai Jiao Tong University, CN), Dong Xuan (The Ohio State University, US), Weijia Jia (City University of Hong Kong, CN)
	Energy-efficient Capture of Stochastic Events by Global-and Local-Periodic Network Coverage Shibo He, Jiming Chen (Zhejiang University, CN), David Yau, Huanyu Shao (Purdue University, USA), Youxian Sun (Zhejiang University, CN)

10:30 AM - 11:00 AM	Break	<i>Vieux Carre Foyer</i>
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11:00 AM - 12:30 PM	Session 5: Scheduling in Wireless Networks (II) <i>VCB Salon II</i> <i>Session Chair: Yung Yi (KAIST, Korea)</i>
	Improved Bounds on the Throughput Efficiency of Greedy Maximal Scheduling in Wireless Networks Mathieu Leconte, Jian Ni, R. Srikant (University of Illinois at Urbana-Champaign, USA)
	Admission Control and Scheduling for QoS Guarantees for Variable-Bit-Rate Applications on Wireless Channels I-Hong Hou, P. R. Kumar (University of Illinois at Urbana-Champaign, USA)
	Minimum-Latency Aggregation Scheduling in Multihop Wireless Networks Peng-Jun Wan (Illinois Institute of Technology, US), Chih-Hao Huang (City University of Hong Kong, HK)

12:30 PM - 2:00 PM	Lunch	<i>Fulton Street Rooms</i>
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2:00 PM - 3:30 PM

Panel Discussion

VCB Salon II

Moderator: Konstantinos Psounis (University of Southern California, USA)

Future of Multi-hopping: from Theory to Practice

Mostafa Amma (*Georgia Tech University, USA*), John Bara, (*University of Maryland, USA*), Ness Shroff (*Ohio State University, USA*), Peter Steenkiste (*Carnegie Mellon University, USA*)

3:30 PM - 5:30 PM

Session 6: Secure Communication

VCB Salon II

Session Chair: Dong Xuan (The Ohio State University, USA)

Secure Multidimensional Range Queries in Sensor Networks

Rui Zhang, Jing Shi, Yanchao Zhang (New Jersey Institute of Technology, USA)

Efficient Uncoordinated FHSS Anti-jamming Communication

Mario Strasser, Christina Pöpper, Srdjan Capkun (ETH Zurich, CH)

Zero Pre-shared Secret Key Establishment in the presence of Jammers

Guevara Noubir, Tao Jin, Bishal Thapa (Northeastern University, USA)

Optimal Monitoring in Multi-Channel Multi-Radio Wireless Mesh Networks

Dong-Hoon Shin, Saurabh Bagchi (Purdue University, USA)

7:00 PM

Boarding at Dock

8:00 PM - 10:00 PM

Banquet on board the Creole Queen

Thursday, May 21

7:30 AM - 8:30 AM **Continental Breakfast** *Fulton Street Rooms*

8:30 AM - 10:00 AM **Session 7: Performance Evaluation** *VCB Salon II*

Session Chair: Han Cai (North Carolina State University, USA)

How to Correctly Use the Protocol Interference Model for Multi-hop Wireless Networks

Yi Shi, Thomas Hou, Jia Liu (Virginia Tech, USA), Sastry Kompella (Naval Research Laboratory, USA)

Characterizing the Exit Process of a Non-Saturated IEEE 802.11 Wireless Network

Punit Rathod (Indian Institute of Technology Bombay, IN), Onkar Dabeer (Tata Institute of Fundamental Research, IN), Abhay Karandikar, Anirudha Sahoo (IIT Bombay, IN)

Experimental Characterization of Sectorized Antennas in Dense 802.11 Wireless Mesh Networks

Anand Prabhu Subramanian (Stony Brook University, USA), Henrik Lundgren, Theodoros Salonidis (Thomson, FR)

10:00 AM - 10:30 AM **Break** *Vieux Carre Foyer*

10:30 AM - 11:30 AM **Session 8: Coding and Forwarding** *VCB Salon II*

Session Chair: Jian Ni (University of Illinois at Urbana-Champaign, USA)

A Novel Reliable and Energy-Saving Forwarding Technique for Wireless Sensor Networks

Giuseppe Campobello (University of Messina, IT), Alessandro Leonardi, Sergio Palazzo (University of Catania, IT)

A Practical Joint Network-Channel Coding Scheme for Reliable Communication in Wireless Networks

Zheng Guo, Jie Huang, Bing Wang, Jun-Hong Cui, Shengli Zhou, Peter Willett (University of Connecticut, USA)

11:30 AM - 1:00 PM **Session 9: Information Dissemination & Location Service** *VCB Salon II*

Session Chair: Min Ding (Georgia Washington University, USA)

MotionCast: On the Capacity and Delay Tradeoffs

Chenhui Hu, Xinbing Wang (Shanghai Jiaotong University, CN), Feng Wu (Microsoft Research Asia, CN)

Multicasting in Delay Tolerant Networks: A Social Network Perspective

Wei Gao, Qinghua Li, Bo Zhao, Guohong Cao (Pennsylvania State University, USA)

3DLS: Density-Driven Data Location Service for Mobile Ad-Hoc Networks

Roy Friedman, Noam Mori (Technion - Israel Institute of Technology, IL)

MobiHoc 2009 Posters

BitBurgle: A Protocol for Stealing Unused Spectrum From an Ongoing Flow

Scott Novich and Ashutosh Sabharwal (*Rice University, US*)

A State-based Battery Model for Nodes' Lifetime Estimation in Wireless Sensor

Joseph Ramé and Khaldoun Al Agha Paris-Sud (*University, France*)

A novel sensor localization scheme by mobile actors

Xu Li, Nathalie Mitton, Isabelle Ryl and David Simplot (*CNRS / INRIA / University of Lille 1, France*)

Cooperative Spectrum Sensing for Cognitive Radio Networks with Amplify and Forward Relaying over Correlated Log-Normal Shadowing

Marco Di Renzo (*CTTC, Spain*) Laura Imbriglio, Fabio Grazioso and Fortunato Santucci (*University of L'Aquila, Italy*)

A DoS-Resilient En-route Filtering Scheme for Sensor Networks

Chia-Mu Yu and Chun-Shien Lu (*Academia Sinica, ROC*) Sy-Yen Kuo (*National Taiwan University, ROC*)

Uisce: An Alternative Approach to End-to-end Delivery in MANETS

Guoxian Yang and Stefan Weber (*Trinity College, Ireland*)

From Theory to Practice: Topology Control in Wireless Sensor Networks

Fadila Khadar and David Simplot-Ryl (*INRIA / IRCICA / LIFL, France*)

Social Network Analysis on Data Diffusion in Delay Tolerant Networks

Yang Zhang, Jing Zhao (*The Pennsylvania State University, US*)

Evaluating the 700MHz Wireless Mesh Networking

Yan He, Van Nguyen, Dmitri Perkins and Niang-Feng Tzeng (*University of Louisiana of Lafayette, US*)

Pub/Sub Content Sharing for Mobile Networks

Francesco Malandrino, Claudio Casetti and Carla Chiasserini (*Politecnico di Torino, Italy*)

Routing with Multi-hop Wireless Mesh Networks with Bandwidth Guarantees

Ronghui Hou, King-Shan Lui, Hon Sun Chiu and Kwan L. Yeung (*The University of Hong Kong, Hong-Kong*)

MobiHoc 2009 Demonstrations

Aggressive Cognitive Radio (ACR): How to Make Your Own White Space

Peter Wolniansky (*Radio Technology Systems, Ocean Grove, NJ, USA*) Ivan Seskar, (*WINLAB, Rutgers University, North Brunswick, NJ, USA*)

CSMA Interaction Detection and Capacity Estimation in Cognitive Radio Networks

Antonio Greco, Thomas Micher, Vinay Kolar, Petri Mahonen (*Department of Wireless Networks, RWTH Aachen University*)

Demonstration of Cooperative Diversity using a Custom Software-Defined Radio Prototype

Glenn Bradford, Brian Dunn, Michael Dickens, Zhanwei Sun, J. Nicholas Laneman (*Department of Electrical Engineering, University of Notre Dame*)

Demonstration of Highly Programmable Downlink OFDMA (WiMax) Transceivers for SDR Systems

Hamid Eslami, Gaurav Patel, Chitaranjan P. Sukumar, Sang V. Tran, Ahmed M. Eltawil (*EECS Department, University of California, Irvine*) Raghu Rao, Chris Dick (Xilinx, Inc.)

Haggle - A Search-Based Data Dissemination Architecture for Mobile Devices

Erik Nordstrom, Daniel Aldman, Fredrik Bjurefors and Christian Rohner (*Uppsala University, Department of Information Technology, Uppsala, Sweden*)

Multi-sector Antenna Performance in Dense Wireless Networks

Henrik Lundgren, Theodoros Salonidis, Pascal Le (*Thomson, Paris, France*) Anand Prabhu Subramanian (*Stony Brook University, New York, USA*)

WARPnet: Clean Slate Research on Deployed Wireless Networks

Siddharth Gupta, Chris Hunter, Patrick Murphy and Ashutosh Sabharwal, (*Electrical and Computer Engineering, Rice University*) An

Agile Radio Framework for Unmanaged Wireless Environments

Zhou Wang, Alain Gefflaut, Alexandre de Baynast (*European Microsoft Innovation Center, Aachen, Germany*) Ranveer Chandra, Thomas Moscibroda, Victor Bahl (*Microsoft Research, Redmond, USA*)