

2007 IEEE International Conference on Network Protocols

**Beijing, China
16-19 October 2007**



IEEE Catalog Number: CFP07065-PRT
ISBN 10: 1-4244-1587-X
ISBN 13: 978-1-4244-1587-8

Table of Contents

ICNP 2007

Message from the General Co-Chairs.....iii

Message from the Technical Program Committee Chair.....iv

Committee Members.....vi

External Reviewers.....ix

Session I - Wireless mesh networks

Multicast Algorithms for Multi-Channel Wireless Mesh Networks.....1
G. Zeng, B. Wang, Y. Ding, L. Xiao, M. Mutka (Michigan State University, USA)

Throughput Maximization in Multi-channel Wireless Mesh Access Networks....11
Y. Song, C. Zhang, Y. Fang (University of Florida, USA)

Identifying High Throughput Paths in 802.11 Mesh Networks: a Model-based Approach.....21
*T. Salonidis (Thomson, France), M. Garetto (Universita di Torino, Italy),
A. Saha(Tropos Networks, USA), E. Knightly (Rice University, USA)*

Cooperation Between Stations in Wireless Networks.....31
A. Forte, H. Schulzrinne (Columbia University, USA)

Session II - Sensor and RFID networks

A Probabilistic Coverage Protocol for Wireless Sensor Networks.....41
M. Hefeeda, H. Ahmadi (Simon Fraser University, Canada)

Coverage Without Location Information.....51
O. Younis (Telcordia, USA), M. Krunz, S. Ramasubramanian (University of Arizona, USA)

Slotted Scheduled Tag Access in Multi-Reader RFID Systems.....61
Z. Zhou(Ask.com), H. Gupta, S. Das, X. Zhu (Stony Brook University, USA)

Greedy Virtual Coordinates for Geographic Routing.....71
B. Leong (National University of Singapore), B. Liskov, R. Morris (MIT, USA)

Session III - Interdomain routing

Understanding Route Redistribution.....81
F. Le (Carnegie Mellon University, USA), G. Xie (Naval Postgraduate School, USA), H. Zhang (Carnegie Mellon University, USA)

Inferring the Origin of Routing Changes using Link Weights.....93
M. Lad, R. Oliveira (UCLA, USA), D. Massey (Colorado State University, USA), L. Zhang (UCLA, USA)

Geographically Informed Inter-domain Routing.....103
R. Oliveira, M. Lad (UCLA, USA), B. Zhang (University of Arizona, USA), L. Zhang (UCLA, USA)

Lexicographic Products in Metarouting.....113
A. Gurney, T. Griffin (University of Cambridge, UK)

Session IV - Wireless LANs

PSM-throttling: Minimizing Energy Consumption for Bulk Data Communications in WLANs.....123
E. Tan, L. Guo (Ohio State University, USA), S. Chen (George Mason University, USA), X. Zhang (Ohio State University, USA)

Traffic-Aware Channel Assignment in Enterprise Wireless LANs.....133
E. Rozner, Y. Mehta (University of Texas at Austin, USA), A. Akella (University of Wisconsin at Madison, USA), L. Qiu (University of Texas at Austin, USA)

Adaptive Optimization of Rate Adaptation Algorithms in Multi-Rate WLANs.....144
J. Choi, J. Na (Seoul National University, Korea), K. Park (Purdue University, USA), C. Kim (Seoul National University, Korea)

Scheduled PSM for Minimizing Energy in Wireless LANs.....154
Y. He, R. Yuan (Tsinghua University, China), X. Ma, J. Li, C. Wang (Thomson)

Session V - Network security

- Network-based and Attack-resilient Length Signature Generation for Zero-day Polymorphic Worms.....164
Z. Li (Northwestern University, USA), L. Wang (Tsinghua University, China), Y. Chen (Northwestern University, USA), Z. Fu (Motorola Labs, USA)
- A Poisoning-Resilient TCP Stack.....174
A. Mondal and A. Kuzmanovic (Northwestern University, USA)
- Routing amid Colluding Attackers.....184
J. Eriksson (MIT, USA), M. Faloutsos, S. Krishnamurthy (UC Riverside, USA)
- Loss and Delay Accountability for the Internet.....194
K. Argyraki (EPFL, Switzerland), P. Maniatis (Intel Research, USA), O. Irzak, S. Ashish (EPFL, Switzerland), S. Shenker (UC Berkeley, USA)

Session VI - Rate and congestion control

- Improving the Convergence and Stability of Congestion Control Algorithm.....206
X. Huang, C. Lin, F. Ren, G. Yang, P. Ungsunan, and Y. Wang (Tsinghua University, China)
- TFRC Veno: An Enhancement of TCP Friendly Rate Control over Wired/Wireless Networks.....216
B. Zhou, C. Fu (Nanyang Technological University, Singapore), V. Li (University of Hong Kong, Hong Kong, China)
- A Simple Model for Analyzing P2P Streaming Protocols.....226
Y. Zhou, D. Chiu, J. Lui (Chinese University of Hong Kong, China)
- Best Effort Session-Level Congestion Control.....236
S. Ramesh (Microsoft, USA), S. Kasera (University of Utah, USA)

Session VII - Protocol implementation

- HEXA: Compact Data Structures for Faster Packet Processing.....246
S. Kumar, J. Turner, P. Crowley (Washington University, USA), M. Mitzenmacher (Harvard University, USA)

A Performance Study of Loss Detection/Recovery in Real-world TCP Implementations.....256
S. Rewaskar, J. Kaur, F. Smith (University of North Carolina at Chapel Hill, USA)

TCAM Razor: A Systematic Approach Towards Minimizing Packet Classifiers in TCAMs.....266
C. Meiners, A. Liu, E. Torng (Michigan State University, USA)

Source Address Validation: Architecture and Protocol Design.....276
J. Wu, G. Ren, X. Li (Tsinghua University, China)

Session VIII --- Firewalls and privacy

Design and Implementation of Cross-Domain Cooperative Firewall.....284
J. Cheng (UCLA, USA), H. Yang (IBM Research, USA), S. Wong(UCLA, USA), P. Zerfos(Deutsche Telekom Lab, Germany), S. Lu (UCLA, USA)

FireCracker: A Framework for Inferring Firewall Policies using Smart Probing.....294
T. Samak, A. El-Atawy, E. Al-Shaer (DePaul University, USA)

ALARM: Anonymous Location-Aided Routing in Suspicious MANETs.....304
K. El Defrawy, G. Tsudik(UC Irvine, USA)

Location Privacy in Sensor Networks Against a Global Eavesdropper.....314
K. Mehta, D. Liu, M. Wright (University of Texas at Arlington, USA)

Posters Session

PL-Gossip: Area Hierarchy Maintenance in Large-Scale Wireless Sensor Networks.....324
K. Iwanicki (Vrije Universiteit, The Netherlands; DevLab, The Netherlands), M. van Steen (Vrije Universiteit, The Netherlands)

Towards Coding-Efficient Link-Scheduling and Coding-Aware Routing in Wireless Networks.....326
J. Le, J. Lui, D. Chiu(Chinese University of Hong Kong, Hong Kong, China)

Supporting VCR in Peer-to-Peer Video-On-Demand.....328
Y. He, Y. Liu (Hong Kong University of Science and Technology, Hong Kong, China)

FRASA: Feedback Retransmission Approximation for the Stability Region of Finite-User Slotted ALOHA.....	330
<i>K. Hui, O. Yue, W. Lau (The Chinese University of Hong Kong, Hong Kong, China)</i>	
Price of Asynchrony: Queuing under Ideally Smooth Congestion Control.....	332
<i>M. Podlesny, S. Gorinsky (Washington University, USA)</i>	
Distributed Delay Estimation and Call Admission Control in IEEE 802.11 WLANs.....	334
<i>K. Yasukawa (Tokyo Institute of Technology, Japan), A. Forte, H. Schulzrinne (Columbia University, USA)</i>	
Network Court Protocol and Malicious Node Conviction.....	336
<i>N. Li, D. Lee (The Ohio State University, USA)</i>	
A Game Theoretic Framework of Distributed Power and Rate Control in IEEE 802.11 WLANs.....	338
<i>L. Chen, J. Leneutre (Ecole Nationale Supérieure des Telecommunications, France)</i>	
A Lightweight Online Network Anomaly Detection Scheme Based on Data Mining Methods.....	340
<i>Y. Li, B. Fang (Institute of Computing Technology, Chinese Academy of Sciences, China)</i>	
An Entropy-based Throughput Metric for Fairly Evaluating WSN Routing Protocols.....	342
<i>T. AL-khdour, U. Baroudi (KFUPM, Saudi Arabia)</i>	
Author Index.....	A-1