

PODC 2009 — Program

Sunday August 9

17:30–20:30 Reception (Nickle Arts Museum)

Monday August 10

Regular Papers (ICT 121)

Session Chair: *Maurice Herlihy*

- 08:20 Preventing versus Curing: Avoiding Conflicts in Transactional Memories
Aleksandar Dragojevic, Rachid Guerraoui, Anmol V. Singh, Vasu Singh
- 08:45 Dynamic Atomic Storage Without Consensus
Marcos Aguilera, Idit Keidar, Dahlia Malkhi, Alexander Shraer
- 09:10 Randomized Mutual Exclusion in $O(\log N/\log \log N)$ RMRs
Danny Hendler, Philipp Woelfel
- 09:35 Max Registers, Counters, and Monotone Circuits
James Aspnes, Hagit Attiya, Keren Censor

Coffee Break (Foyer ICT 121/122)

10:00–10:30

Brief Announcements (ICT 121)

Session Chair: *Fabian Kuhn*

- 10:30 Stateless Distributed Algorithms for Generalized Packing Linear Programs
Baruch Awerbuch, Zhenghua Fu, and Rohit Khandekar
- 10:35 Concurrent Non-commutative Boosted Transactions
Eric Koskinen and Maurice Herlihy
- 10:40 Distributed Phase Synchronization of Dynamic Set of Processes
R.K. Shyamasundar and Shivali Agarwal
- 10:45 How to Speed-up Fault-Tolerant Clock Generation in VLSI Systems-on-Chip via Pipelining
Andreas Dielacher, Matthias Fugger, and Ulrich Schmid
- 10:50 Perfectly Secure Message Transmission in Directed Networks Re-Visited
Arpita Patra, Ashish Choudhary, and C. Pandu Rangan
- 10:55 Virtual World Consistency: a new Condition for STM Systems
Damien Imbs and Michel Raynal

Brief Announcements (ICT 122)

Session Chair: *Marcos Aguilera*

- 10:30 A Note on Distributed Stable Matching
Alex Kipnis and Boaz Patt-Shamir
- 10:35 On a Selfish Caching Game
Pietro Michiardi, Carla-Fabiana Chiasserini, Claudio Casetti, Chi-Anh La, and Marco Fiore
- 10:40 Non-Self-Stabilizing and Self-Stabilizing Gathering in Networks of Mobile Agents—the Notion of Speed
Joffroy Beauquier, Janna Burman, Julien Clement, and Shay Kutten
- 10:45 The Disagreement Power of an Adversary
Carole Delporte-Gallet, Hugues Fauconnier, Rachid Guerraoui, and Andreas Tielmann
- 10:50 Weakest failure detectors via an egg-laying simulation
Antonio Fernandez, Sergio Rajsbaum, Corentin Travers
- 10:55 Optimization Based Rate Allocation for Application Layer Multicast
Jinyao Yan, Martin May, and Bernhard Plattner

Keynote Talk (ICT 121)

- 11:10 Refining the Way to Consensus
Robbert van Renesse

Lunch Break

- 12:20 Lunch provided for PODC participants (Dining Centre, Alberta Room)

Regular Papers (ICT 121)

Session Chair: *Michel Raynal*

- 13:45 Tight Bounds for Clock Synchronization
Christoph Lenzen, Thomas Locher, Roger Wattenhofer
- 14:10 Load Balancing Without Regret in the Bulletin Board Model
Robert Kleinberg, Georgios Piliouras, Eva Tardos
- 14:35 Concurrent Imitation Dynamics in Congestion Games
Heiner Ackermann, Petra Berenbrink, Simon Fischer, Martin Hofer
- 15:00 Extracting Quorum Failure Detectors
Vibhor Bhatt, Nicholas Christman, Prasad Jayanti

Coffee Break (Foyer ICT 121/122)

15:25-15:55

Regular Papers (ICT 121)

Session Chair: *Dahlia Malkhi*

- 15:55 The Weakest Failure Detector for Solving k-Set Agreement
Eli Gafni, Petr Kuznetsov
- 16:20 Simple and Efficient Asynchronous Byzantine Agreement with Optimal Resilience
Arpita Patra, Ashish Choudhary, C. Pandu Rangan
- 16:45 Partial Synchrony Based on Set Timeliness
Marcos K. Aguilera, Carole Delporte-Gallet, Hugues Fauconnier, Sam Toueg
- 17:10 Fast Scalable Deterministic Consensus for Crash Failures
Bogdan S. Chlebus, Dariusz R. Kowalski, Michal Strojnowski

Business Meeting & Rump Session (ICT 116)

20:30–23:00

Tuesday August 11

Regular Papers (ICT 121)

Session Chair: *Idit Keidar*

- 08:20 The Forgiving Graph: A distributed data structure for low stretch under adversarial attack
Tom Hayes, Jared Saia, Amitabh Trehan
- 08:45 A Distributed Polylogarithmic Time Algorithm for Self-Stabilizing Skip Graphs
Riko Jacob, Andrea Richa, Christian Scheideler, Stefan Schmid, Hanjo Täubig
- 09:10 The Flip Markov Chain and a Randomizing P2P Protocol
Colin Cooper, Martin Dyer, Andrew J. Handley
- 09:35 Correctness of Gossip-Based Membership under Message Loss
Maxim Gurevich, Idit Keidar

Coffee Break (Foyer ICT 121/122)

10:00-10:30

Brief Announcements (ICT 121)

Session Chair: *Thomas Moscibroda*

- 10:30 The Price of Anonymity: Optimal Consensus despite Asynchrony, Crash and Anonymity
Francois Bonnet and Michel Raynal
- 10:35 Minimum Spanning Trees and Cone-Based Topology Control
Alejandro Cornejo and Nancy Lynch

- 10:40 Locality-Based Aggregate Computation in Wireless Sensor Networks
Jen-Yeu Chen, Gopal Pandurangan, and Jianghai Hu
- 10:45 Tight Lower Bounds for Greedy Routing in Uniform Small World Rings
Martin Dietzfelbinger and Philipp Woelfel
- 10:50 Optimal Self-stabilizing Multi-token Ring: A Randomized Solution
Anurag Dasgupta, Sukumar Ghosh, and Andrew Berns
- 10:55 Fast Scalable Byzantine Agreement in the Full Information Model with a Nonadaptive Adversary
Valerie King and Jared Saia

Brief Announcements (ICT 114)

Session Chair: *Petr Kuznetsov*

- 10:30 Push: a DISC shell
Eric Van Hensbergen and Noah Evans
- 10:35 Deaf, Dumb, and Chatting Robots: Enabling Distributed Computation & Fault-Tolerance Among Stigmergic Robots
Yoann Dieudonné, Shlomi Dolev, Franck Petit, and Michael Segal
- 10:40 Global Consistency can be Easier than Point-to-Point Communication
Prasant Gopal, Anuj Gupta, Pranav K. Vasishta, Piyush Bansal, and Kannan Srinathan
- 10:45 Vertical Paxos and Primary-Backup Replication
Leslie Lamport, Dahlia Malkhi, and Lidong Zhou
- 10:50 Topology Knowledge Affects Probabilistic Reliable Communication
Pranav K. Vasishta, Prasant Gopal, Anuj Gupta, Piyush Bansal, and Kannan Srinathan
- 10:55 A Platform for Experimenting with Mobile Algorithms in a Laboratory
Matthieu Roy and Marc-Olivier Killijian

Keynote Talk (ICT 102)

- 11:10 Memory Models: A Case for Rethinking Parallel Languages and Hardware
Sarita V. Adve

Lunch Break

- 12:20 • Industry sponsored lunch for **students, postdocs, and employees of industrial sponsors** (Dining Centre, Alberta Room)
- Lunch on your own for everyone else

Invited Session on Industrial Applications of Algorithms (ICT 102)

Session Chair: *Marcos Aguilera*

- 13:45 The life and times of a ZooKeeper
Flavio Junqueira, Benjamin Reed
- 14:15 Cassandra - A Structured Storage System on a P2P Network
Avinash Lakshman, Prashant Malik
- 14:45 Pregel: A System for Large-Scale Graph Processing
Grzegorz Malewicz, Matthew H. Austern, Aart J. C. Bik, James C. Dehnert, Ilan Horn, Naty Leiser, Grzegorz Czajkowski

Coffee Break (Foyer ICT 121/122)

15:15-15:45

Regular Papers (ICT 121)

(Session Chair: *Faith Ellen*)

- 15:45 Fast Distributed Random Walks
Atish Das Sarma, Danupon Nanongkai, Gopal Pandurangan
- 16:10 Distributed and Parallel Algorithms for Weighted Vertex Cover and other Covering Problems
Christos Koufogiannakis, Neal E. Young
- 16:35 Return of the Primal-Dual: Distributed Metric Facility Location
Saurav Pandit, Sriram Pemmaraju

Banquet (Calgary Zoo)

18:00

Wednesday August 12

Regular Papers (ICT 121)

Session Chair: *Pierre Fraigniaud*

- 08:20 The Wireless Synchronization Problem
Shlomi Dolev, Seth Gilbert, Rachid Guerraoui, Fabian Kuhn, Calvin Newport
- 08:45 SINR Diagrams: Towards Algorithmically Usable SINR Models of Wireless Networks
Chen Avin, Yuval Emek, Erez Kantor, Zvi Lotker, David Peleg, Liam Roditty
- 09:10 Coloring Unstructured Wireless Multi-Hop Networks
Johannes Schneider, Roger Wattenhofer
- 09:35 Oblivious Interference Scheduling
Alexander Fanghänel, Thomas Kesselheim, Harald Räcke, Berthold Vöcking

Coffee Break (Foyer ICT 121/122)

10:00-10:30

Brief Announcements (ICT 121)

Session Chair: *Andrea Richa*

- 10:30 The Theory Of Network Tracing
H. B. Acharya and M. G. Gouda
- 10:35 Efficient Pruning of Ad-Hoc Wireless Networks
Enoch Peserico
- 10:40 Self-Assembly as Graph Grammar as Distributed System
Aaron Sterling
- 10:45 Distributed Discovery of Large Near-Cliques
Zvika Brakerski and Boaz Patt-Shamir
- 10:50 Lightweight Key Agreement and Digital Certificates for Wireless Sensor Networks
Oscar Garcia-Morchon, Tobias Heer, Ludo Tolhuizen, and Klaus Wehrle
- 10:55 Distributed Algorithms for Approximating Wireless Network Capacity
Michael Dinitz

Keynote Talk (ICT 102)

- 11:10 Emerging Challenges and Opportunities in Parallel Computing: The Cretaceous Redux?
Bruce A. Hendrickson

Lunch Break

- 12:20 BBQ for PODC/SPAA participants (Dining Centre, Patio)

Regular Papers (ICT 121)

Session Chair: *Boaz Patt-Shamir*

- 13:45 Efficient Broadcasting in Known Topology Radio Networks with Long-range Interference
Frantisek Galcik, Leszek Gasieniec, Andrzej Lingas
- 14:10 The Effect of Power-Law Degrees on the Navigability of Small Worlds
Pierre Fraigniaud, George Giakkoupis
- 14:35 Bounding the Locality of Distributed Routing Algorithms
Prosenjit Bose, Paz Carmi, Stephane Durocher
- 15:00 Parsimonious Flooding in Dynamic Graphs
Hervé Baumann, Pierluigi Crescenzi, Pierre Fraigniaud

Coffee Break (Foyer ICT 121/122)

15:25-15:55

Brief Announcements (ICT 121)

Session Chair: *Ittai Abraham*

- 15:55 Hardness of Broadcasting in Wireless Networks with Unreliable Communication
Fabian Kuhn, Nancy Lynch, and Calvin Newport
- 16:00 Complexity Analysis and Algorithm Design for Pipeline Configuration in Distributed Networks
Yi Gu, Qishi Wu, Anne Benoit, and Yves Robert
- 16:05 Exactly Electing a Unique Leader is not Harder than Computing Symmetric Functions
on Anonymous Quantum Networks
Hirotada Kobayashi, Keiji Matsumoto, and Seiichiro Tani
- 16:10 Impossibility Results for Optimistic Fair Exchange with Multiple Autonomous Arbiters
Alptekin Küpçü and Anna Lysyanskaya
- 16:15 Collaborative Measurement of Upload Speeds in P2P Systems
John R. Douceur, James Mickens, Thomas Moscibroda, and Debmalaya Panigrahi
- 16:20 New Bounds for the Controller Problem
Yuval Emek and Amos Korman