

STACS 2005

22nd International Symposium on
Theoretical Aspects of
Computer Science
Stuttgart, Germany
February 24-26, 2005

Conference Program

Wednesday, 23.02.2005

16:00	Faculty Colloquium, University of Stuttgart 16:00-17:00, room V38.01 (open to all participants) Manindra Agrawal: Primes is in P
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Beginning of STACS:

Wednesday, 23.02.2005

17:30 *Registration (Hotel Telekom, 17:30-20:00)*

19:00 *Welcome Reception (Hotel Telekom, 19:00-21:00)*

Thursday, 24.02.2005

08:30 *Registration (Computer Science building, room 0.124)*

09:00	Plenary session, invited Talk 1 Uwe Schöning Algorithmics in Exponential Time Chair: Volker Diekert / Room: V38.01
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10:00 *Coffee break*

	— Session 1 A — Chair: Friedhelm Meyer auf der Heide / Room: V38.01	— Session 1 B — Chair: Dietrich Kuske / Room: V38.04
10:30	Carsten Witt: Worst-Case and Average-Case Approximations by Simple Randomized Search Heuristics	Lidia Tendera: Counting in the two variable guarded logic with transitivity
10:55	Petros Drineas, Ravi Kannan and Michael Mahoney: Sampling Sub-problems of Heterogeneous Max-Cut Problems and Approximation Algorithms	Dietmar Berwanger and Giacomo Lenzi: The variable hierarchy of the mu-calculus is strict
11:20	Nir Andelman, Yossi Azar and Motti Sorani: Truthful Approximation Mechanisms for Scheduling Selfish Related Machines	Manuel Bodirsky: The core of a countably categorical structure

11:45 *Break*

	— Session 2 A — Chair: Brigitte Vallée / Room: V38.01	— Session 2 B — Chair: Hendrik Jan Hoogeboom / Room: V38.04
11:55	Guillaume Theyssier: How Common Can Be Universality for Cellular Automata	Tomas Brazdil, Antonin Kucera and Oldrich Strazovsky: On the Decidability of Temporal Properties of Probabilistic Pushdown Automata
12:20	Victor Poupet: Cellular Automata: Real-Time Equivalence Between One-Dimensional Neighborhoods	Detlef Kähler, Ralf Küsters and Thomas Wilke: Deciding Properties of Contract-Signing Protocols

12:45 *Break (Lunch 13:00-14:00)*

	— Session 3 A — Chair: Eric Allender / Room: V38.01	— Session 3 B — Chair: Peter Høyer / Room: V38.04
14:30	Christian Glaßer: Polylog-Time Reductions Decrease Dot-Depth	Zdeněk Dvořák, Vít Jelínek, Daniel Král', Jan Kynčl and Michael Saks: Three Optimal Algorithms for Balls of Three Colors
14:55	Frank Harary, Wolfgang Slany and Oleg Verbitsky: On the Computational Complexity of the Forcing Chromatic Number	Xiang-Yang Li and Zheng Sun: Cost Sharing and Strategyproof Mechanisms for Set Cover Games
15:20	Lars Engebretsen and Jonas Holmerin: More Efficient Queries in PCPs for NP and Improved Approximation Hardness of Maximum CSP	Petra Berenbrink, Tom Friedetzky, Zengjian Hu and Russ Martin: On Weighted Balls-into-bins Games

15:45 *Coffee break*

	— Session 4 A — Chair: Pascal Weil / Room: V38.01	— Session 4 B — Chair: Rolf Klein / Room: V38.04
16:15	Gregorio Malajovich and Klaus Meer: Computing Multi-Homogeneous Bézout Numbers is Hard	Sasanka Roy, Sandip Das and Subhas C. Nandy: Shortest Monotone Descent Path Problem in Polyhedral Terrain
16:40	Volker Weber and Thomas Schwentick: Dynamic Complexity Theory Revisited	Markus Schmidt: Packet Buffering - Randomization Beats Deterministic Algorithms
17:05	Jianer Chen, Henning Fernau, Iyad Kanj and Ge Xia: Parametric Duality and Kernelization: Lower Bounds and Upper Bounds on Kernel Size	Abraham D. Flaxman and Bartosz Przydatek: Solving Medium-Density Subset Sum Problems in Expected Polynomial Time

17:30 *STACS-tistics (Holger Petersen)*

Friday, 25.02.2005

09:00	<p>Plenary session, invited Talk 2</p> <p>Manindra Agrawal</p> <p>Automorphisms of Finite Rings and Applications to Complexity of Problems</p> <p>Chair: Eric Allender / Room: V38.01</p>
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10:00 *Coffee break*

	— Session 5 A — Chair: Hendrik Jan Hoogeboom / Room: V38.01	— Session 5 B — Chair: Gilles Schaeffer / Room: V38.04
10:30	Hubie Chen: Quantified Constraint Satisfaction, Maximal Constraint Languages, and Symmetric Polymorphisms	Josep Diaz, Xavier Perez, Maria Serna and Nicholas Charles Wormald: Connectivity for wireless agents moving on a cycle or grid
10:55	Michael Benedikt and Luc Segoufin: Regular tree-languages definable in FO	Marcin Bienkowski, Mirosław Dynia and Mirosław Korzeniowski: Improved Algorithms for Dynamic Page Migration
11:20	Kousha Etessami and Mihalis Yannakakis: Recursive Markov Chains, Stochastic Grammars, and Monotone Systems of Non-linear equations	Prosenjit Bose, Evangelos Kranakis, Pat Morin and Yihui Tang: Approximate range mode and range median queries

11:45 *Break*

	— Session 6 A — Chair: Ulrich Hertrampf / Room: V38.01	— Session 6 B — Chair: Dietrich Kuske / Room: V38.04
11:55	Emmanuel Jeandel: Topological Automata	Harry Buhrman, Ilan Newman, Nikolai Vereshchagin and Lance Fortnow: Increasing Kolmogorov Complexity
12:20	Gregor Gramlich and Georg Schnitger: Minimizing NFA's and Regular Expressions	Wolfgang Merkle, Joseph Miller, Andre Nies, Jan Reimann and Frank Stephan: Kolmogorov-Loveland Randomness and Stochasticity

12:45 *Break (Lunch 13:00-14:00)*

	— Session 7 A — Chair: Jop Sibeyn / Room: V38.01	— Session 7 B — Chair: Friedhelm Meyer auf der Heide / Room: V38.04
14:30	Nir Ailon and Bernard Chazelle: Information Theory in Property Testing and Monotonicity Testing in Higher Dimension	Vikraman Arvind and Thirumalai Chakravarthi Vijayaraghavan: The Complexity of solving Linear Equations over a Finite Ring
14:55	Vittorio Bilò, Michele Flammini and Luca Moscardelli: On Nash Equilibria in Non-Cooperative All-Optical Networks	Michael Kaminski: A lower bound on the complexity of polynomial multiplication over finite fields
15:20	Nikhil Bansal and Kirk Pruhs: Speed Scaling to Manage Temperature	Andreas Krebs, Klaus-Jörn Lange and Stephanie Reifferscheid: Characterizing TC⁰ in Terms of Infinite Groups

15:45 *Coffee break*

	— Session 8 A — Chair: Giuseppe Persiano / Room: V38.01	— Session 8 B — Chair: Brigitte Vallée / Room: V38.04
16:15	Joachim Gudmundsson, Giri Narasimhan and Michiel Smid: Fast pruning of geometric spanners	Fabio Burderi and Antonio Restivo: Varieties of Codes and Kraft Inequality
16:40	Gerard Jennhwa Chang, Antonius J. J. Kloks, Jiping Liu and Sheng-Lung Peng: The PIGs Full Monty – A floor show of minimal separators	Amnon Ta-Shma and Eran Rom: Improving the alphabet-size in high noise, almost optimal rate list decodable codes.
17:05	Ulrik Brandes and Daniel Fleischer: Centrality Measures Based on Current Flow	Michal Kunc: The power of commuting with finite sets of words

19:00 *Conference Dinner (at the Aquarium of the Wilhelma)*

Saturday, 26.02.2005

09:00	Plenary session, invited Talk 3 Mireille Bousquet-Mélou Algebraic series in enumerative combinatorics, and context-free languages Chair: Bruno Durand / Room: V38.01
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10:00 *Coffee break*

	— Session 9 A — Chair: Peter Høyer / Room: V38.01	— Session 9 B — Chair: Jop Sibeyn / Room: V38.04
10:30	Seiichiro Tani, Hirotada Kobayashi and Keiji Matsumoto: Deterministic Leader Election via Distributed Quantum Computing	Benjamin Doerr: Roundings Respecting Hard Constraints
10:55	Harry Buhrman, Ilan Newman, Hein Roehrig and Ronald de Wolf: Robust Polynomials and Quantum Algorithms	Gianni Franceschini: Sorting Stably, In-Place, with $O(n \log n)$ Comparisons and $O(n)$ Moves
11:20	Gus Gutoski and John Watrous: Quantum Interactive Proofs with Competing Provers	Nicole Immerlica, Mohammad Mahdian and Vahab Mirrokni: Cycle Cover with Short Cycles

11:45 *Break*

	— Session 10 A — Chair: Rolf Klein / Room: V38.01	— Session 10 B — Chair: Gilles Schaeffer / Room: V38.04
11:55	Telikepalli Kavitha and Kurt Mehlhorn: A Polynomial Time Algorithm for Minimum Cycle Basis in Directed Graphs	Violetta Lonati and Massimiliano Goldwurm: Pattern occurrences in multicomponent models
12:20	Surender Baswana, Vishrut Goyal and Sandeep Sen: All-pairs nearly 2-approximate shortest-paths in $O(n^2 \text{ polylog } n)$ time	Graham P Oliver and Richard M Thomas: Automatic presentations for finitely generated groups

12:45 *Break (Lunch 13:00-14:00)*