

STOC'06 Program

All conference events (except lunches) will take place on the 3rd floor of the Red Lion Hotel. Talks will be held in the Emerald Ballrooms. Lunches will be served on the 5th floor in the Terrace Garden restaurant.

SATURDAY, May 20

Registration: Emerald Foyer 7-10pm
Reception: Emerald Ballroom II 8-10pm

SUNDAY, May 21

Registration: Emerald Foyer 8am –11:30am, 1:30pm – 5pm

Session 1A 8:35-9:45

Emerald I-II

Chair: Madhu Sudan

Explicit Capacity-Achieving List-Decodable Codes

Venkatesan Guruswami and Atri Rudra

Gowers Uniformity, Influence of Variables, and PCPs

Alex Samorodnitsky and Luca Trevisan

Sub-Constant Error Low Degree Test of Almost-Linear Size

Dana Moshkovitz and Ran Raz

Session 2A 10:10-11:20

Emerald I-II

Chair: Jon Kleinberg

Reducibility Among Equilibrium Problems

Paul W. Goldberg and Christos H. Papadimitriou

The Complexity of Computing a Nash Equilibrium

Constantinos Daskalakis, Paul W. Goldberg and Christos H. Papadimitriou

The Effect of Collusion in Congestion Games

Ara Hayrapetyan, Eva Tardos and Tom Wexler

Session 1B 8:35-9:45

Emerald III

Chair: Amin Saberi

The Santa Claus Problem

Nikhil Bansal and Maxim Sviridenko

On maximizing welfare when utility functions are subadditive

Uriel Feige

A Randomized Polynomial-Time Simplex Algorithm for Linear Programming

Jonathan A. Kelner and Daniel A. Spielman

Session 2B 10:10-11:20

Emerald III

Chair: Tal Malkin

Black-Box Constructions of Secure Protocols

Yuval Ishai, Eyal Kushilevitz, Yehuda Lindell and Erez Petrank

Information-Theoretically Secure Protocols and Security under Composition

Eyal Kushilevitz, Yehuda Lindell and Tal Rabin

Private Approximation of Search Problems

Amos Beimel, Paz Carmi, Kobbi Nissim and Enav Weinreb

Session 3 11:30-12:30 Emerald I-II

Chair: Jon Kleinberg

Invited Talk:

The changing face of web search: Algorithms, Auctions and Advertising
Prabhakar Raghavan

Lunch 12:30-2:00 Terrace Garden (5th Floor)

Session 4A 2:00-3:35

Emerald I-II

Chair: Assaf Naor

On the Solution-Space Geometry of Random
Constraint Satisfaction Problems

*Dimitris Achlioptas and Federico Ricci-
Tersenghi*

Counting independent sets up to the tree
threshold

Dror Weitz

The DLT Priority Sampling is Essentially
Optimal

Mario Szegedy

Optimal Phylogenetic Reconstruction

*Constantinos Daskalakis, Elchanan Mossel
and Sebastien Roch*

Session 5A 4:05-4:50

Emerald I-II

Chair: Assaf Naor

Near-Optimal Algorithms for Unique Games

*Moses Charikar, Konstantin Makarychev and
Yury Makarychev*

New Approximation Guarantee for Chromatic
Number

*Sanjeev Arora, Eden Chlamtac and Moses
Charikar*

Session 6: Emerald I-II 5:00-5:40

Chair: Madhu Sudan

Winner of Best Paper Award:

The PCP Theorem via Gap Amplification
Irit Dinur

Business Meeting 9-11pm Emerald I-II

Session 4B 2:00-3:35

Emerald III

Chair: Tal Malkin

Time-Space Tradeoffs for Implementations of
Snapshots

*Panagiota Fatourou, Faith Fich and Eric
Ruppert*

Byzantine Agreement in the Full-Information
Model in $O(\log n)$ rounds

*Michael Ben-Or, Elan Pavlov and Vinod
Vaikuntanathan*

Fast Leader-Election Protocols with Bounded
Cheaters' Edge

Spyridon Antonakopoulos

Pricing for Fairness: Distributed Resource
Allocation for Multiple Objectives

Sung-woo Cho and Ashish Goel

Session 5B 4:05-4:50

Emerald III

Chair: Sudipto Guha

Finding a Maximum Weight Triangle in Sub-
Cubic Time, With Applications

Virginia Vassilevska and Ryan Williams

Time-Space Trade-Offs for Predecessor Search

Mihai Patrascu and Mikkel Thorup

MONDAY, May 22

Registration: Emerald Foyer 8am – 11:30am, 1:30pm – 3:00pm

Session 7A 8:35-9:45

Emerald I-II

Chair: Frank McSherry

A Combinatorial Characterization of the Testable Graph Properties: It's All About Regularity
Noga Alon, Eldar Fischer, Ilan Newman and Asaf Shapira

Graph limits and parameter testing
Christian Borgs, Jennifer T. Chayes, Laszlo Lovasz, Vera T. Sos, Balazs Szegedy and Katalin Vesztergombi

Advances in Metric Embedding Theory
Ittai Abraham, Yair Bartal and Ofer Neiman

Session 7B 8:35-9:45

Emerald III

Chair: Tal Malkin

Zero Knowledge with Efficient Provers
Minh-Huyen Nguyen and Salil Vadhan

Zero-knowledge against quantum attacks
John Watrous

Local Zero Knowledge
Silvio Micali and Rafael Pass

Session 8A 10:10-11:20

Emerald I-II

Chair: Piotr Indyk

A Quasi-Polynomial Time Approximation Scheme for Minimum Weight Triangulation
Jan Remy and Angelika Steger

Building triangulations with epsilon-nets
Kenneth L. Clarkson

The distance trisector curve
Tetsuo Asano, Jiri Matousek and Takeshi Tokuyama

Session 8B 10:10-11:20

Emerald III

Chair: Madhu Sudan

Conditional Hardness for Approximate Coloring
Irit Dinur, Elchanan Mossel, Oded Regev

Clique-width minimization is NP-hard
Michael R. Fellows, Frances A. Rosamond, Udi Rotics and Stefan Szeider

Hardness of Approximate Two-level Logic Minimization and PAC Learning with Membership Queries
Vitaly Feldman

Session 9 11:30-12:30 Emerald I-II

Chair: Allan Borodin

Invited Talk:

Can Every Randomized Algorithm be Derandomized?
Russell Impagliazzo

Lunch 12:30-2:00 Terrace Garden (5th Floor)

Session 10A 2:00-3:35

Emerald I-II

Chair: Sudipto Guha

Finding small balanced separators
Uriel Feige and Mohammad Mahdian

Graph Partitioning using Single Commodity Flows
Rohit Khandekar, Satish Rao and Umesh Vazirani

Linear time low tree-width partitions and algorithmic consequences
Jaroslav Nesetril and Patrice Ossona de Mendez

Approximating chromatic number and list-chromatic number in minor-closed and odd-minor-closed classes of graphs
Ken-ichi Kawarabayashi and Bojan Mohar

Session 11A 4:05-4:50

Emerald I-II

Chair: Dieter van Melkebeek

Pseudorandom Walks on Regular Digraphs and the RL vs. L Problem
Omer Reingold, Luca Trevisan and Salil Vadhan

An efficient algorithm for solving word equations
Wojciech Plandowski

Session 12: Emerald I-II 5:00-5:50

Chair: Dieter van Melkebeek

Co-winners of Lewin Best Student Paper Award:

Extractors for a Constant Number of Polynomial Min-Entropy Independent Sources
Anup Rao

Narrow Proofs May Be Spacious: Separating Space and Width in Resolution
Jakob Nordstrom

Session 10B 2:00-3:35

Emerald III

Chair: Scott Aaronson

Hyperbolic Polynomials Approach to Van der Waerden/Schrijver-Valiant like Conjectures
Leonid Gurvits

A Polynomial Quantum Algorithm for Approximating the Jones Polynomial
Dorit Aharonov, Vaughan Jones and Zeph Landau

On the Fourier tails of bounded functions over the discrete cube
Irit Dinur, Ehud Friedgut, Guy Kindler and Ryan O'Donnell

Lattice Problems and Norm Embeddings
Oded Regev and Ricky Rosen

Session 11B 4:05-4:50

Emerald III

Chair: Amin Saberi

Online Trading Algorithms and Robust Option Pricing
Peter DeMarzo, Ilan Kremer and Yishay Mansour

On Adequate Performance Measures for Paging
Konstantinos Panagiotou and Alexander Souza

TUESDAY, May 23

Registration: Emerald Foyer 8:30 am – 11:30am

Session 13A 8:55-10:30

Emerald I-II

Chair: Frank McSherry

Logarithmic Hardness of the Directed
Congestion Minimization Problem

Matthew Andrews and Lisa Zhang

Hardness of Cut Problems in Directed Graphs

Julia Chuzhoy and Sanjeev Khanna

Integrality Gaps for Sparsest Cut and Minimum
Linear Arrangement Problems

*Nikhil Devanur, Subhash Khot, Rishi Saket and
Nisheeth Vishnoi*

On Earthmover Distance, Metric Labeling, and
0-Extension

*Howard Karloff, Subhash Khot, Aranyak Mehta
and Yuval Rabani*

Session 14A 10:55-12:30

Emerald I-II

Chair: Scott Aaronson

Bounded-Error Quantum State Identification and
Exponential Separations in Communication
Complexity

*Dmitry Gavinsky, Julia Kempe, Oded Regev,
Ronald de Wolf*

Limitations of Quantum Coset States for Graph
Isomorphism

*Sean Hallgren, Cristopher Moore, Martin
Roetteler, Alexander Russell and Pranab Sen.*

A new quantum lower bound method, with
applications to direct product theorems and time-
space tradeoffs

*Andris Ambainis, Robert Spalek and Ronald de
Wolf*

New upper and lower bounds for randomized
and quantum Local Search

Shengyu Zhang

Session 13B 8:55-10:30

Emerald III

Chair: Piotr Indyk

Approximate Nearest Neighbors and the Fast
Johnson-Lindenstrauss Transform

Nir Ailon and Bernard Chazelle

On the Importance of Idempotence

*Sunil Arya, Theodoros Malamatos and David
Mount*

Searching Dynamic Point Sets in Spaces with
Bounded Doubling Dimension.

Richard Cole and Lee-Ad Gottlieb

Learning a Circuit by Injecting Values

*Dana Angluin, James Aspnes, Jiang Chen and
Yinghua Wu*

Session 14B 10:55-12:30

Emerald III

Chair: Allan Borodin

New Trade-Offs in Cost-Sharing Mechanisms

Tim Roughgarden and Mukund Sundararajan

Simple Cost-sharing Schemes for Multi-
Commodity Rent-or-Buy and Stochastic Steiner
Tree

*Lisa Fleischer, Jochen Koenemann, Stefano
Leonardi and Guido Schaefer*

Truthful Randomized Mechanisms for
Combinatorial Auctions

*Shahar Dobzinski, Noam Nisan and Michael
Schapira*

Fast Convergence to Wardrop Equilibria by
Adaptive Sampling Methods

*Simon Fischer, Harald Racke and Berthold
Vocking*

Lunch 12:30-2:00 Terrace Garden (5th Floor)

Session 15A 2:00-4:00

Emerald I-II

Chair: Scott Aaronson

2-Source Dispersers for $n^{o(1)}$ Entropy, and Ramsey Graphs Beating the Frankl-Wilson Construction
Boaz Barak, Anup Rao, Ronen Shaltiel and Avi Wigderson

Linear Degree Extractors and the Inapproximability of Max-Clique and Chromatic Number
David Zuckerman

Deterministic Extractors For Small Space Sources
Jesse Kamp, Anup Rao, Salil Vadhan and David Zuckerman

On Basing One-Way Functions on NP-Hardness
Adi Akavia, Oded Goldreich, Shafi Goldwasser and Dana Moshkovitz

On the Randomness Complexity of Efficient Sampling
Bella Dubrov and Yuval Ishai

Session 15B 2:00-4:00

Emerald III

Chair: Jon Kleinberg

A Quasi-PTAS for Unsplittable Flow on Line Graphs
Nikhil Bansal, Amit Chakrabarti, Amir Epstein and Baruch Schieber

Minimizing Average Flow Time on Related Machines
Naveen Garg and Amit Kumar

Provably Near-Optimal Sampling-Based Algorithms for Stochastic Inventory Models
Retsef Levi, Robin Roundy and David Shmoys

A subset spanner for planar graphs, with application to subset TSP
Philip N. Klein

Edge-Disjoint Paths in Planar Graphs with Constant Congestion
C. Chekuri, S. Khanna and F.B. Shepherd