

Dagstuhl Seminar 11121
Computational Complexity of Discrete Problems
20-25.03.2011

Talk Schedule (as of 22.03)

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The regular sessions are from 09.00 till 12.00 and from 15.15 or 15.30 till 18.00. Wednesday afternoon is reserved for a hike. The program ends Friday at noon.

Monday morning:

09.00: Welcome and introductions

09.45: Prahladh Harsha
A survey of recent advances in threshold functions

10.30: coffee break

11.00: Prahladh Harsha
Bounding the average and noise sensitivity of polynomial threshold functions

11.30: Fabian Wagner
Isomorphism and canonization of bounded treewidth graphs

Monday afternoon:

15.15: Meena Mahajan
Counting classes and the fine structure between NC^1 and L

15.45: Srikanth Srinivasan
The hardness of the noncommutative determinant

16.15: Or Meir
IP = PSPACE using error correcting codes

16.45: break

17.00: Andrew Drucker
Probabilistically checkable debates of nearly-linear size

17.30: Eric Allender
Limits on the computational power of random strings

Monday evening

19:.30: vernissage art exhibit

Tuesday morning:

- 09.00: Paul Beame
A survey of some recent results on AC^0
- 09.45: short break
- 09.50: Paul Beame
How well do AC^0 circuits approximate parity?
Approximating AC^0 by "small" height decision trees.
- 10.20: coffee break
- 10.35: Beate Bollig
Randomized OBDDs for the most significant bit of multiplication
need exponential size
- 11.00: Anna Gal
The size and depth of layered Boolean circuits
- 11.30: Matthias Krause
On the preimage resistance of blockcipher-based cryptographic
hash functions

Tuesday afternoon:

- 15.15: Pavel Pudlak
Pseudo-random generators for group products
- 15.45: Thomas Watson
Pseudorandom generators for combinatorial checkerboards
- 16.15: Andrej Bogdanov
Pseudorandomness for read-once formulas
- 16.45: break
- 17.00: Eldar Fischer
Testing assignments for satisfying a monotone formula
- 17.30: Jakob Nordstrom
On the semantics of local characterizations for
linear-invariant properties

Tuesday evening:

- 19.30: rump session

Wednesday morning:

09.00: Troy Lee

A survey of some recent results in communication complexity

09.45: short break

09.50: Troy Lee

Optimal quantum algorithms go in straight lines

10.20: coffee break

10.35: Oded Regev

Quantum one-way communication can be exponentially stronger than classical communication

11.20: Oded Regev

An optimal lower bound on the communication complexity of Gap-Hamming-Distance

Thursday morning:

- 09.00: Eli Ben-Sasson
A survey of extractors for simple algebraic sources
- 09.45: short break
- 09.50: Eli Ben-Sasson
From affine to two-source extractors via approximate duality
- 10.20: coffee break
- 10.35: Xin Li
Improved constructions of three-source extractors
- 11.05: Emanuele Viola
Extractors for circuit sources
- 11.35: Amnon Ta-Shma
What binary codes can be obtained by concatenating AG codes
with Hadamard?

Thursday afternoon:

- 15.30: Matthew Anderson
Derandomizing polynomial identity testing for multilinear
constant-read formulae
- 16.00: Markus Blaeser
Randomness efficient testing of sparse blackbox identities of
unbounded degree over the reals
- 16.30: break
- 16.45: Kristoffer Arnsfelt Hansen
Learning read-constant polynomials of constant degree modulo
composites
- 17.15: Nicole Schweikardt
Locality of AC^0 -computable graph queries

Friday morning:

- 09.00: Robin Moser
A survey on exact algorithms for constraint satisfaction problems
- 09.45: short break
- 09.50: Robin Moser
A full derandomization of Schoening's k-SAT algorithm
- 10.20: coffee break
- 10.35: Michael Elberfeld
Algorithmic meta theorems inside logspace and their applications
- 11:05: Ilan Newman
Triangular rank and sampling with multiplicative errors
- 11.30: Philipp Woelfel
Tight lower bounds for greedy routing in uniform small world rings