

## Dagstuhl Seminar “Optimal Algorithms and Proofs”

### Monday, 13 October 2014

- 9:30 welcome and introduction
- 10:00 open problems I
- 10:30 coffee break
- 11:00 **David Steurer:** Survey on Approximations and Optimality
- 12:00 lunch break
- 15:00 **Alan Selman:** Disjoint NP-pairs and Propositional Proof Systems
- 16:00 break
- 16:45 **Olaf Beyersdorff:** Optimal Proof Systems - a Survey
- 18:00 dinner
- 19:30 opening of the art exhibit “über \* oder über 1.”

## Dagstuhl Seminar “Optimal Algorithms and Proofs”

### Tuesday, 14 October 2014

9:00 **Pavel Pudlák:** On some conjectures in proof complexity

10:00 coffee break

10:30 **Dmitry Itsykson:**

On optimal heuristic computations and heuristic proofs

11:30 **Dimitry Sokolov:** Examples of heuristic proofs

12:00 lunch break

15:00 **Rahul Santhanam:**

Hierarchies and Lower Bounds via Optimality: A Survey

16:00 break

16:30 **Johan Håstad:** On the correlation of parity and small-depth circuits

17:00 **Igor Carboni Oliveira:** Majority is incompressible by  $AC^0[p]$  circuits

18:00 dinner

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## **Wednesday, 15 October 2014**

9:00 **Yijia Chen:** A Parameterized Halting Problem

10:00 coffee break

10:30 **Mikoláš Janota:** QBF Solving and proof systems

11:00 **Leroy Chew:** Proof Complexity for Quantified Boolean Formulas

12:00 lunch break

13:30 hike

18:00 dinner

# Dagstuhl Seminar “Optimal Algorithms and Proofs”

**Thursday, 16 October 2014**

9:00 **Andrew Drucker:**

On the Success Probability of Polynomial-Time SAT Solvers

10:00 coffee break

10:30 **Alexander Kulikov:** Circuit Lower Bounds

11:15 **Benjamin Rossman:**  $AC^0$  complexity of subgraph isomorphism

12:00 lunch break

15:00 **Ilario Bonacina:** Total Space in Resolution

16:00 break

16:30 **Massimo Lauria:** Narrow Proofs May Be Maximally Long

17:00 **Nicola Galesi:** The space complexity of cutting planes refutations

17:30 **Hunter Monroe:**

Speedup for Natural Computational Problems and Noncomputability

18:00 dinner

19:30 open problem session II

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## Friday, 17 October 2014

9:00 **Sam Buss:**

Are there hard examples for Frege systems? — almost 20 years later

9:30 **Jochen Messner:** An observation on Levin’s algorithm  
and a new (?) application to matrix multiplication

10:00 coffee break

10:30 **Zenon Sadowski:**

Characterising the existence of optimal proof systems

11:15 closing

12:00 lunch