

OPTIMAL DISCRETE
STRUCTURES AND ALGORITHMS

Universität Rostock, September 13 – 15, 2010

PRELIMINARY SCHEDULE ♦ ACCEPTED TALKS

OPTIMAL DISCRETE
STRUCTURES AND ALGORITHMS

Universität Rostock, September 13 – 15, 2010

EXTENDED ORGANIZING COMMITTEE

A. Brandstädt	K. Engel	H.-D. Gronau	V.B. Le
F. Pfender	T. Kalinowski	R. Labahn	K. Schölzel
M. Böhm	A. Straßburg	R. Nevries	K. Sperfeld
Ch. Hundt	T. Strauß	Ch. Reiher	H. Birkholz
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Dear participants,

welcome to

Optimal Discrete Structures and Algorithms 2010

in Rostock. After ODSA 1997, ODSA 2000, the German Congress of Mathematicians 2003 (with special emphasis on our ODSA profile) and ODSA 2006, this is the next conference of our ODSA series. We wish and hope that the conference atmosphere stimulates fruitful discussions of specialists in different areas of research which should be the starting point of deeper interactions between these areas from Discrete Mathematics, Mathematical Optimization, and Theoretical Computer Science.

For us it is very helpful that ODSA is sponsored by the Deutsche Forschungsgemeinschaft, the Institute of Combinatorics and its Applications, and the University of Rostock. We assume that we may express our thanks to these institutions also on behalf of all participants. Last but not least, we would like to thank all colleagues and students at the Institutes of Mathematics and Computer Science of the University of Rostock who were involved in the organization of this conference.

We wish you nice talks, interesting new results, close cooperation for the future, a successful refereeing process for the conference paper and best Baltic-weather during your stay in Rostock.

Andreas Brandstädt
Konrad Engel
Hans-Dietrich Gronau
Roger Labahn
Van Bang Le
Florian Pfender

Plenary Talks

Karoński, Michał	Vertex-coloring edge-weightings
Leader, Imre	Higher Order Tournaments
Mehlhorn, Kurt	Improving the Price of Anarchy for Selfish Routing via Coordination Mechanisms
Wallis, Walter D.	Triple Arrays
Widmayer, Peter	When and how weak microrobots can perform hard tasks
Woeginger, Gerhard J.	Optimization problems under polyhedral norms

Section Talks

Alkhateeb, Mais	Further Results on b -Colorings of Graphs
Benyahia Tani, Nesrine	Enumeration of the Partitions of n into m and Especially Two Types of Parts
Betten, Dieter	A special class of 2-(28,4,1) unitals
Böhm, Matthias	Maximal flat regular antichains
Bouchemakh, Isma	Broadcast domination number of the cross product of paths
Engels, Birgit	Approximate solutions for generalized network flow in freight car disposition
Foniok, Jan	Linear Complementarity, Unique-Sink Orientations and Oriented Matroids
Gimadi, Edward	Approximation algorithms with performance guarantees for some discrete routing problems
Glebov, Roman	Conflict-free Graph Colorings
Glebov, Aleksey	Colouring planar graphs without close short cycles
Greiner, Gero	The Transposition of Sparse Matrices in the I/O-Model
Gropp, Harald	On small orbital matrices
Gropp, Harald	On the history of Latin squares and related objects
Hammersen, Katharina	On mirror nodes in graphs without long induced paths
Harper, Larry H.	Morphisms for Resistive Electrical Networks
Harutyunyan, Hovhannes	On Broadcasting in Graphs of Given Order and Size
Holena, Martin	An approach to discrete evolutionary optimization and its application to the search for optimal catalytic materials
Hussain, Shahid	Sequential Optimization of Paths in Directed Graphs Relative to Different Cost Functions
Imreh, Csanád	Online packing of rectangles into the minimal perimeter rectangle
Ivonina, Evgeniya	On approximation algorithms for two peripatetic salesmen problem
Jäger, Gerold	A SAT Based Algorithm for Magic Labeling
Kalashnikov, Vyacheslav	Calculation of Consistent Conjectures in Mixed Oligopoly Models
Kalashnikov, Vyacheslav	Advantages and Applications of Binomial Calculus
Kempner, Yulia	Poly-Antimatroids and their Convex Realizers
Koch, Maria	Maximum weight of a connected graph of given order and size
Kochol, Martin	Canonical forms of acyclic and totally cyclic orientations of graphs
Kohl, Anja	On upper bounds for the b -chromatic number and b -continuous graph classes
Kurochkin, Alexander	Effective algorithm for the two-stage FLP on the tree network
Lapus, Raymond	On the st -spread resistance of a graph
Lau, Anja	A traveling salesperson problem with quadratic cost structure

Section Talks (continued)

Malick, Rauf Ahmed Shams Manea, Florin	Biological Networks as Complex Network Graphs Two ways to construct partial words, seen from a combinatorics-on-words-perspective
Mejia, Carolina Miswanto,	Counting monomer-dimer covers in grids The Collective Behavior of Multi-Agents System for Tracking a Desired Path
Motorina, Nadezhda	Asymptotically exact approach to multi-project resource-constrained project scheduling problem with random input
Ngurah, Anak Agung Gede Östergård, Patric Panda, Bhawani S.	On H -supermagic coverings of graphs Recent Results on the Classification of Codes and Designs New Characterizations for Interval Graphs and Proper Interval Graphs
Pardella, Gregor Randerath, Bert Rautenbach, Dieter Reiher, Christian Roberts, Ian Rykov, Ivan Sahakyan, Hasmik Salem, Khaled A. Saputro, S.W. Schaudt, Oliver Schmid, Wolfgang A.	Enhancing max-flow algorithms for special graph types On Bounds for the Triangle-versus-Graph Ramsey Number On Reversible and Irreversible Conversions Inverse aspects of combinatorial zero-sum theory Antichains and Combinatorial Designs Effective algorithms for some vector subset problems Essential points of the n -cube subset partitioning characterization The hypergraphs generated by catacondensed hexagonal systems The metric dimension of (μ, σ) -regular graph On the Existence of Dominating Induced Subgraphs On the maximum length of sequences with few zero-sum subsequences and connections to coding theory
Schmutzer, Andreas Shenmaier, Vladimir	An Exact Algorithm for Equicuts in Graphs Asymptotically optimal algorithms for geometric MAX TSP and m-PSP
Singhun, Sirirat Sperfeld, Konrad Strehler, Martin To, Thu-Hien Toko Worou, Bio Mikaila	Graphs with Cyclomatic Number Two having Panconnected Square Subgraphs in multipartite graphs Polynomial cases of the Maximum Confluent Flow Problem Recognize 3 and 4-leaf powers of galled networks Fast Approximation for Computing the Fractional Arboricity of a Graph
Trinks, Martin	The Merrifield-Simmons conjecture holds for some generalizations of cycles
Vu Dinh, Hoa Weil, Vera Zambalaeva, Dolgor	Packing cubic graphs in K_n and cubic graph designs On Minimal Counterexamples to Reed's Conjecture 4/3-approximation algorithm for the minimum 2-PSP with different weight functions valued 1 and 2

Further participants

Anderson, Richard; Bild, Claire; Birkholz, Harald; Brandstädt, Andreas; Counts, Paul; Engel, Konrad; Fischer, Frank; Gronau, Hans-Dietrich; Grützmüller, Martin; Gurski, Frank; Hundt, Christian; Jacob, Riko; Kalashnykova, Nataliya; Kiesel, Antje; Labahn, Roger; Le, Van Bang; Montoya, Juan Andres; Nevries, Ragnar; Pfender, Florian; Schölzel, Karsten; Shirinkam, Sara; Simon, Frank; Strauß, Tobias; Straßburg, Andreas; Tittmann, Peter; Yepremyan, Liana;

ODSA 2010

Monday, September 13th 2010

Room 326 (Hörsaal III)

09.15 – 09.30 Opening

09.30 – 10.30 Kurt Mehlhorn

Improving the Price of Anarchy for Selfish Routing via Coordination Mechanisms

10.30 – 11.00 Coffee break

11.00 – 12.00 Peter Widmayer

When and how weak microrobots can perform hard tasks

Time	Section A Room 125 (Hörsaal I)	Section B Room 228 (Hörsaal II)	Section C Room 326 (Hörsaal III)
13.30	Patric Östergård Recent Results on the Classification of Codes and Designs	Gerold Jäger A SAT Based Algorithm for Magic Labeling	Roman Glebov Conflict-free Graph Colorings
14.00	Wolfgang A. Schmid On the maximum length of sequences with few zero-sum subsequences and connections to coding theory	Shahid Hussain Sequential Optimization of Paths in Directed Graphs Relative to Different Cost Functions	Oliver Schaudt On the Existence of Dominating Induced Subgraphs
14.30	Christian Reiher Inverse aspects of combinatorial zero-sum theory	Birgit Engels Approximate solutions for generalized network flow in freight car disposition	Mais Alkhateeb Further Results on b -Colorings of Graphs
15.00	Coffee break		
15.30	Hasmik Sahakyan Essential points of the n -cube subset partitioning characterization	Anja Lau A traveling salesperson problem with quadratic cost structure	Katharina Hammersen On mirror nodes in graphs without long induced paths
16.00	Khaled A. Salem The hypergraphs generated by cat-acondensed hexagonal systems	Martin Holena An approach to discrete evolutionary optimization and its application to the search for optimal catalytic materials	Isma Bouchemakh Broadcast domination number of the cross product of paths
16.30	Vyacheslav Kalashnikov Calculation of Consistent Conjectures in Mixed Oligopoly Models	Evgeniya Ivonina On approximation algorithms for two peripatetic salesmen problem	Hovhannes Harutyunyan On Broadcasting in Graphs of Given Order and Size

18.00 Boat Excursion with Conference Dinner

Tuesday, September 14th 2010

Room 326 (Hörsaal III)

09.00 – 10.00 Michał Karoński

Vertex-coloring edge-weightings

10.00 – 10.30 Coffee break

10.30 – 11.30 Gerhard J. Woeginger

Optimization problems under polyhedral norms

Time	Section A Room 125 (Hörsaal I)	Section B Room 228 (Hörsaal II)	Section C Room 326 (Hörsaal III)
13.00	Ian Roberts Antichains and Combinatorial Designs	Larry H. Harper Morphisms for Resistive Electrical Networks	Maria Koch Maximum weight of a connected graph of given order and size
13.30	Matthias Böhm Maximal flat regular antichains	Vyacheslav Kalashnikov Advantages and Applications of Binomial Calculus	Martin Kochol Canonical forms of acyclic and totally cyclic orientations of graphs
14.00	Nesrine Benyahia Tani Enumeration of the Partitions of n into m and Especially Two Types of Parts	Yulia Kempner Poly-Antimatroids and their Convex Realizers	Anja Kohl On upper bounds for the b -chromatic number and b -continuous graph classes
14.30	Coffee break		
15.00	Dieter Betten A special class of 2-(28,4,1) unitals	Alexander Kurochkin Effective algorithm for the two-stage FLP on the tree network	Raymond Lapus On the st-spread resistance of a graph
15.30	Florin Manea Two ways to construct partial words, seen from a combinatorics-on-words-perspective	Edward Gimadi Approximation algorithms with performance guarantees for some discrete routing problems	Canceled S. Panda New Characterizations for Interval Graphs and Proper Interval Graphs
16.00	Anak Agung Gede Ngurah On H -supermagic coverings of graphs	Nadezhda Motorina Asymptotically exact approach to multi-project resource-constrained project scheduling problem with random input	S.W. Saputro The metric dimension of (μ, σ) -regular graph
16.30	Coffee break		
17.00	Gero Greiner The Transposition of Sparse Matrices in the I/O-Model	Carolina Mejia Counting monomer-dimer covers in grids	Bert Randerath On Bounds for the Triangle-versus-Graph Ramsey Number
17.30	Thu-Hien To Recognize 3 and 4-leaf powers of galled networks	Jan Foniok Linear Complementarity, Unique-Sink Orientations and Oriented Matroids	Bio Mikaila Toko Worou Fast Approximation for Computing the Fractional Arboricity of a Graph

ODSA 2010

Wednesday, September 15th 2010

Room 326 (Hörsaal III)

09.00 – 10.00 Imre Leader

Higher Order Tournaments

10.00 – 10.30 Coffee break

10.30 – 11.30 Walter D. Wallis

Triple Arrays

Time	Section A Room 125 (Hörsaal I)	Section B Room 228 (Hörsaal II)	Section C Room 326 (Hörsaal III)
13.00	Vera Weil On Minimal Counterexamples to Reed's Conjecture	Gregor Pardella Enhancing max-flow algorithms for special graph types	Aleksey Glebov Colouring planar graphs without close short cycles
13.30	Dieter Rautenbach On Reversible and Irreversible Conversions	Ivan Rykov Effective algorithms for some vector subset problems	Andreas Schmutzger An Exact Algorithm for Equicuts in Graphs
14.00	Csanád Imreh Online packing of rectangles into the minimal perimeter rectangle	Vladimir Shenmaier Asymptotically optimal algorithms for geometric MAX TSP and m-PSP	Sirirat Singhun Graphs with Cyclomatic Number Two having Panconnected Square
14.30	Coffee break		
15.00	Canceled Shams Malick Biological Networks as Complex Network Graphs	Martin Strehler Polynomial cases of the Maximum Confluent Flow Problem	Konrad Sperfeld Subgraphs in multipartite graphs
15.30	Canceled o The Collective Behavior of Multi-Agents System for Tracking a Desired Path	Dolgor Zambalaeva 4/3-approximation algorithm for the minimum 2-PSP with different weight functions valued 1 and 2	Martin Trinks The Merrifield-Simmons conjecture holds for some generalizations of cycles
16.00		Moved Agung Gede Ngurah On H -supermagic coverings of graphs	Moved Weil On Minimal Counterexamples to Reed's Conjecture