

10-th BIELEFELD COLLOQUIUM ON COMBINATORICS
November 19-23, 1990
UNIVERSITÄT BIELEFELD

Bielefeld, Nr. 10

Program:

The conference consists of *Lectures* and *Short Contributions*. The Lectures will be given at the ZiF all-day Monday and every morning Tuesday - Friday. The Short contributions will take place in the University Main Building, part V2, on Tuesday, Wednesday and Friday afternoon.

Monday, November 19, 1990

Lectures at the ZiF:

- 9.00 Opening
 Chair: Klee
- 9.10 - 10.00 J. Nešetřil: Some Problems for Directed Graphs.
- 10.10 - 11.00 D.J.A. Welsh: The Complexity of Counting Problems on Bipartite Graphs.
- Coffee
- 11.30 - 12.20 A. Schrijver: to be announced
- Lunch
- Chair: Schrijver*
- 13.30 - 14.20 R. Diestel: A Proof of the Bounded Graph Conjecture.
- 14.30 - 15.20 ✓ P. Seymour: Separators and Tree-Decompositions in Planar Graphs.
- 15.30 - 16.20 ✓ B. Voigt: Topological Ramsey Theory.
- Coffee
- 16.40 - 17.30 ~~V. Sós: Inequalities for Hamsandwich Problems.~~
- 17.40 - 18.30 ✓ P. Erdős: Some of My Problems and Results in Combinatorial Mathematics.
- 18.30 ✓ Reception given by the Rector of Bielefeld University, Prof. K.P. Grotemeyer, at the ZiF.

Tuesday, November 20, 1990

Lectures at the ZiF:

Chair: Welsh

- 9.10 - 10.00 ✓ A. Frank: Submodular Functions in Graph Theory.
- 10.10 - 11.00 ✓ M. Laurent: The Cut Polytope and the Cut Cone: Facial Structure and Links with Metrics.
- Coffee
- 11.30 - 12.20 ✓ ~~R. Aharoni: to be announced~~ *F. Chung: What is a random sequence?*
- Lunch
- 14.00 - 17.30 Short Contributions in the University Main Building, part V2 (see following pages for details).
- 18.30 Reception given by the Mayor of Bielefeld, at the Town Hall. The bus leaves from in front of the University Main Building at 17.40h.

Wednesday, November 21, 1990

Lectures at the ZiF:

Chair: Chung

9.10 - 10.00 ✓ A. Dress: Trees, Valuated Matroids and Tits Buildings.

10.10 - 11.00 ✓ R.P. Stanley: Subdivisions and Local h -Vectors.

Coffee

11.30 - 12.20 ✓ A. Björner: Three Topics in Topological Combinatorics.

Lunch

14.00 - 19.00 ✓ Short Contributions in the University Main Building, part V2.

The Greek Restaurant in the University Main Building is reserved for dinner.

Thursday, November 22, 1990

Lectures at the ZiF:

Chair: Björner

9.10 - 10.00 W. Deuber: Uniformly Spread Sets in the Plane.

10.10 - 11.00 M. Pouzet: A Projection Property.

Coffee

11.30 - 12.20 V. Klee: Qualitative Stability of Linear Systems.

Lunch

14.00 Excursion to Lemgo, the highlight of the Weserrenaissance. Participation is strongly recommended. Please register using the form on the last page. Buses leave from the ZiF.

Friday, November 23, 1990

Lectures at the ZiF:

Chair: Pouzet

9.10 - 10.00 T. Trotter: Combinatorial Problems for Partially Ordered Sets.

10.10 - 11.00 ~~F. Chung: What is a Random Sequence?~~

Coffee

R. Aharoni

11.30 - 12.20 H.J. Prömel: Excluding Subgraphs: Asymptotic Enumeration, Asymptotic Structure and some Consequences.

Lunch

14.00 - 16.00 Short Contributions in the University Main Building, part V2.

Tuesday, November 20, 1990

	Section I in V 2 - 221	Section II in V 2 - 205	Section III in V 2 - 229	Section IV in V 2 - 235
14.00 Uhr	<i>Chair: Faigle</i> F. Göbel: A Variation on the Hanoi Puzzle	<i>Chair: Seymour</i> R. Bodendiek: On the Spindle-Surface B_2	<i>Chair: Voigt</i> Z. Palka: Overlap Graphs of Digraphs	<i>Chair: Zieschang</i> R.H. Jeurissen: The Minimum Weight Vectors in $RM(v, m)$.
14.30 Uhr 138	I. Althöfer: Data Compression with Artificial Intelligence: The Storage of Chess Master Games as an Example	M. Škoviera: Classification of Regular Maps of $K_n \oplus K_2$	A. Steger: Almost all Berge Graphs are Perfect	H. Lenz: Äquidistante Codes und lineare Räume
15.00 Uhr	D. Wagner: On the Complexity of Ordered Set Properties or How To Play at Hide-and-Seek	R. Müller: Chain Minors of Partially Ordered Sets and Their Applications in Scheduling	L. Mutaichiev: An Asymptotic Property of Random Mappings	R. Lang: Graphen-Numerierungen und Codes
15.30 Uhr	E. Harzheim: A Combinatorial Theorem on Set Systems in Geometry Which is Related to Alexander's Separation Theorem	B. Mohar: Coloring Graphs of Bounded Genus	H.-D. Janetzko: Die Suche nach Bahnen einer periodischen Abbildung - Eine Anwendung der Markoff-Theorie?	J. Key: to be announced

Tuesday, November 20, 1990

Section I in V 2 - 221

Section II in V 2 - 205

Section III in V 2 - 229

Section IV in V 2 - 235

16.00 Uhr / *Chair: Abels*
J.J. Seidel:
Groups Presented by Two-Graphs

Chair: Harzheim
Th. Böhme:
On Metric Properties of Infinite
Graphs

Chair: Frank
M. Karonński:
Semi-Induced Properties of Large
Random Graphs

Chair: Sós
W. Thumser:
Combinatorial Functions Related
to Hierarchy Concepts

16.30 Uhr **J. Kratochvíl:**
Induced Means Difficult

R. Halin:
Some Cardinality Problems for
Cuts in Graphs

P. Dankelmann:
Analoga zum Satz von Turan für
zusammenhängende und zweifach
zusammenhängende Graphen

H. Lefmann:
Canonical Ramsey Numbers

17.00 Uhr **M.A.A. van Leeuwen:**
An Even More Symmetric Form
of Zelevinsky's Pictures

J-M. Brochet:
Cycles in Graphs with Bounded
Independence Number

N.P. Dolbilin:
A Combinatoric Problem Arised
in the 2-Dimenisonal Ising Mo-
del

R.J. Faudree:
Ramsey Problems and Their Connec-
tion to Turán type Extremal Pro-
blems

Wednesday, November 21, 1990

Section I in V 2 - 234

Chair: Aigner

14.00 Uhr

Th. Niessen :

Nash-Williams Conditions and the Existence of $[k, k + l]$ - Factors

14.30 Uhr

R. Simon:

Multisets, Matroids and Λ -Trees

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15.00 Uhr

D. Sehr:

Representations of Binary Simple Matroids by Modules

15.30 Uhr

W. Terhalle:

On Complete Valuated Matroids

16.00 Uhr

G. Ziegler:

Some Minimal Non-Orientable Matroids of Rank Three

Section II in V 2 - 235

Chair: Bonnet

N. Newrly:

The Number of Orders of a Given Isomorphism Type in a Finite Boolean Lattice

W. Geyer:

Chains of Maximal Length in Semidistributive Lattices

K. Reuter:

Computing All Closed Sets of Closure-Like Operators

J. Stephan:

Removalbe Intervals in Finite Lattices

U. Faigle:

Learning Boolean Formulae

Section III in V 2 - 205

Chair: Andreae

Vu-Dinh-Hoa:

Dominating Cycles in Graphs

J. van den Heuvel:

Longest Paths and Cycles in Tough Graphs

H.-J. Voß:

Long Cycles With Many Diagonals

H.J. Veldman:

Cycles Containing Many Vertices of Large Degree

A. Kemnitz:

Fibonacci-Darstellungen von Graphen

Wednesday, November 21, 1990

Section I in V 2 - 234

Chair: Karonski

16.30 Uhr

P. Blanchard:

Stochastic Modelling on Random Graphs of the Spread of Sexually Transmitted Disease

17.00 Uhr

T. Krüger:

Stochastic Modelling on Random Graphs of the Spread of Sexually Transmitted Disease

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17.30 Uhr

J. Šira'ň:

Nearly Uniform Distribution of Edges among k - Subgraphs of a Graph

18.00 Uhr

O. Lupanov:

On the Asymptotical Approach to the Schemes Synthesis Problem

18.30 Uhr

V.M. Khrapchenko:

Distinction and Likeness between Delay and Depth

Section II in V 2 - 235

Chair: Trotter

M. Syslo:

Greedy Linear Extensions of Interval Orders

St. Felsner:

On the Equivalence of Interval Dimension and Dimension

K. Engel:

Interval-Stability and Covering by Intervals in Posets

G. Behrendt:

On Trees and Tree Dimension of Ordered Sets

R. Bonnet:

Superatomic Subalgebras of an Interval Algebra

Section III in V 2 - 205

Chair: Veldmann

C. Hoede:

Consistent Graphs

I. Schiermeyer:

Claws and Hamiltonism

H. Broersma:

The Use of Local Structure in Hamiltonian Graph Theory

T. Andreae:

Some Results on Visibility Graphs

H. Harborth:

Das Esther Klein Problem für Darstellungen des vollständigen Graphen

Wednesday, November 21, 1990

Section IV in V 2 - 229

Chair: Woess

14.00 Uhr J. Bierbrauer:
Designs and Permutations in Cryptography

14.30 Uhr T. van Trung:
142 Authentication Perpendicular Arrays for Arbitrarily Large t

15.00 Uhr P.-H. Zieschang:
Reguläre Normalteiler fahrenttransitiver Automorphismengruppen von Blockplänen

15.30 Uhr G. Wegner:
On 2-Distance Graphs

16.00 Uhr H. Weiss:
Minimale Mengen von Teilpolyominos

Section V in V 2 - 221

Chair: Harborth

H. Abels: *Bielefeld*
Distances with Values in Coxeter Groups

P. Abramenko: *Bielefeld*
Generalized Shellings and Buildings

V. Welker: *Erlangen*
On a Cohen-Macauley Poset Occuring in Group Theory

U. Baumann: *Dresden*
Automorphisms of Cayley Graphs

W. Woess: *Milano*
Amenable Group Actions on Infinite Graphs

Section VI in V 2 - 213

Chair: Danzer

P. Braß:
An Application of Pick's Theorem in Numerical Analysis

D. Vertigan:
The Computational Complexity of Tutte Invariance

K.E. Wolff:
Anwendungen begrifflicher Skalierung

E. Prisner:
The Dynamics of the Line and Path Graph Operators

Wednesday, November 21, 1990

Section IV in V 2 - 229

Chair: Füredi

16.30 Uhr **I. Leader :**
An Isoperimetric Inequality in the Weighted
Cube

17.00 Uhr **R. Labahn:**
Maximizing Antichains with Fixed Size of a
Shadow

17.30 Uhr **Z. Füredi:**
Maximal Graphs without C_4

18.00 Uhr **J. Wills:**
Minkowski-type Inequalities

18.30 Uhr **K. Wetwitschka:**
The Number of Lattice Points Contained in
a Convex Body

Section V in V 2 - 221

Chair: Engel

A. Kerber:
Erfahrungen mit einer Lösung des Grund-
problems der Pólyaschen Abzählungstheo-
rie (der Konstruktion aller molekularen Gra-
phen zu einer vorgegebenen chemischen For-
mel)

H. Si-Kaddour:
On (τ, l) Fixed Sequences

Z. Zeng:
Compatibility of Equivalence Relations and
Linear Independence of Their Related Split
Mappings

J. Gustedt:
Fast Algorithms on Tree-Like Structures

M. Zickwolff:
Nach welchen Kriterien wählen Firmen Hoch-
schulabsolventen aus?

Section VI in V 2 - 213

Friday, November 23, 1990

Section I in V 2 - 234

Chair: Wills

14.00 Uhr

L. Danzer:

Local-Global Theorems for Delone-Graphs
Periodic and Nonperiodic

14.30 Uhr

G. Brinkmann:

Disorder in Periodic Tilings

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15.00 Uhr

R. Franz:

Recursive Enumeration of Periodic Tilings
of the Plane

15.30 Uhr

D. Huson:

Classification of Face-Transitive, Periodic 3D-
Tilings

Section II in V 2 - 235

Chair: Syslo

E. Dahlhaus:

Effiziente parallele Erkennung von Baum-
und Ultrametrikern

B. von Stengel:

Substitution Decomposition for Discrete Func-
tions and Clutters

M. Luxenburger:

Minimal Generating Sets of Partial Implica-
tions

J.I. Janov:

Einige Probleme, verbunden mit untere
Abschätzungen der Rechenzeit

Section III in V 2 - 229

Chair: Prömel

H.J. Bandelt:

Heuristics for Multidimensional Assignment
Problems with Decomposable Costs

A. Schikarski:

Analyse einer topologischen Äquivalenzklasse
mehrstufiger Verbindungsnetzwerke

M. Gerhardt:

A Cellular Automaton as a Discrete Mathe-
matical Model for the Description of Wave
Propagation in Excitable Media

D. Gernert:

Results Obtained by a knowledge-based sy-
stem for graph theory. (Outside the schedule
computer demonstrations can be arranged.
Please contact Professor Gernert)

Friday, November 23, 1990

Section IV in V 2 - 221

Chair: Diestel

14.00 Uhr

W. Wenzel:

Λ -Matroids and Pfaffian Forms

14.30 Uhr

R. Nedela:

On Graphs with Prescribed Set of Neighbourhoods of Vertices or Edges

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15.00 Uhr

A. Huck:

On the Existence of Weak Linkages

15.30 Uhr

E. Triesch:

Suche nach azyklischen Orientierungen von Graphen

Section V in V 2 - 213

Chair: Voss

M. Steel :

Reconstructing Binary Trees from a Partial List of Derived Subtrees

L. van Bang:

F-Graphen

H. Ripphausen -Lipa:

Steiner Forests in Planar Graphs

F. Wagner:

Lettering Maps in a Legible Way