



## Editorial

This volume contains papers solicited from talks presented at the third European Conference on Combinatorics, Graph Theory and Applications (EuroComb05) held in Berlin, September 5–9, 2005. The contributions for the conference were selected by the Program Committee, consisting of the following colleagues:

- Graham Brightwell (London)
- Reinhard Diestel (Hamburg)
- Stefan Felsner (Berlin)
- András Frank (Budapest)
- Gil Kalai (Jerusalem)
- Christian Krattenthaler (Lyon)
- Monique Laurent (Amsterdam)
- Tomasz Łuczak (Posnan)
- Jaroslav Nešetřil (Prague)
- Alexander Pott (Magdeburg)
- Oriol Serra (Barcelona)
- Carsten Thomassen (Lyngby)
- Emo Welzl (Zürich).

Abstracts were published as volume AE in the proceedings series of the electronic journal *Discrete Mathematics & Theoretical Computer Science (DMTCS)*. The contributions to this volume mostly consist of final versions of a selection of papers presented at EuroComb05. Some of the authors have submitted a followup to the work presented at the conference.

This special issue of *European Journal of Combinatorics* covers some of the main trends in contemporary combinatorics. For example random structures are treated in the paper by Richardson, Vu and Wu (in the geometric setting) and in the paper by Cooper, Doerr, Spencer and Tardos. Classical combinatorial problems of enumeration appear in papers by Bodirsky, Gimenez, Kang and Noy, and Fon-Der-Flass and Frid. These problems are studied in contemporary context as also shown on paper by Anstee and Sali. Extremal problems are studied in papers by Talbot, and Kuhn and Osthus (both with a strong random structure component). Algebraic invariants are treated in papers by Van der Holst also, in a more logical context, in the paper by Adler, Gottlob and Grohe. At present, there is a large activity in the studies of various versions of the chromatic number. Consequently, here we have papers by King, Reed and Vetta; by Simonyi and Tardos, and also by Bela, Kral, Mohar and Quittnerova. More graph theory and application motivated papers are published in the companion special volume of *Discrete Mathematics*. In the present volume these areas are represented by papers by Llado and by Marciniszyn, Mitschke and Stojakovic (with a game theoretic motivation) and by Pikhurko, Spencer and Verbitsky (with a complexity and logical definability motivation).

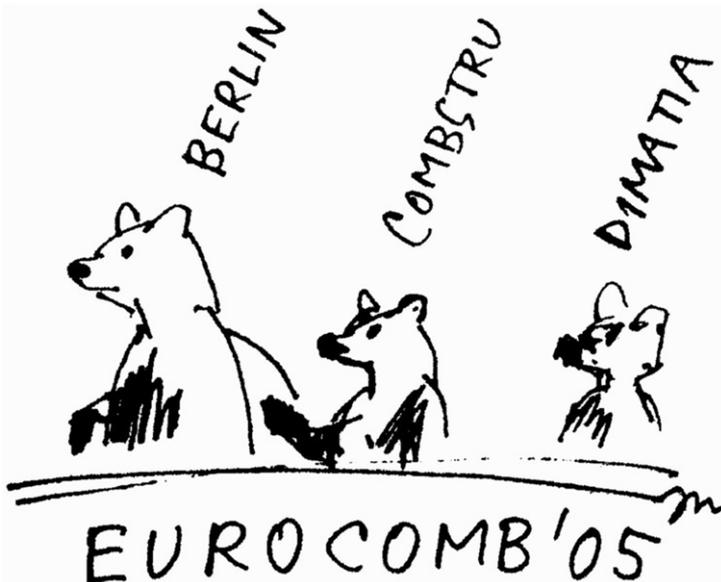
We thank all members of the Program Committee and all our reviewers for their commitment and support, enabling us to see this volume completed only one year after the conference. We

also take the opportunity to thank the Organizing Committee and all the persons who have helped run the conference in a smooth and very pleasant way.

The conference and the publication of this volume was made possible by the support of the Deutsche Forschungsgemeinschaft (DFG) and the European Research and Training Network COMBSTRU.

### Invited talks at EuroComb05 were given by

- Ron Aharoni (Technion, Haifa)  
*Menger's theorem for infinite graphs*
- Mireille Bousquet-Mélou (LaBRI, Bordeaux)  
*On the shape of binary trees*
- Hein van der Holst (TU Eindhoven)  
*Some recent results in topological graph theory*
- Nati Linial (Hebrew University, Jerusalem)  
*Lifts of Graphs*
- László Lovász (Microsoft Research and Eötvös Loránd University)  
*Graph Algebras*
- Bruce Reed (McGill, Montreal)  
*The Evolution of The Mixing Time*
- Alexander Schrijver (CWI, Amsterdam)  
*New code bounds with noncommutative algebra and semidefinite programming*
- Madhu Sudan (MIT, Cambridge)  
*Modelling errors and recovery for communication*
- Gábor Tardos (Rényi, Budapest)  
*Toward an extremal theory of ordered graphs*
- Günter M. Ziegler (TU Berlin)  
*On the Complexity of Space Tilings.*



## **European Prize in Combinatorics awarded**

The European Prize in Combinatorics was established by the European Research and Training Network COMBSTRU and by the center DIMATIA to recognize excellent contributions in combinatorics by young researchers, not older than 35. It is awarded biannually in conjunction with the EuroComb meeting. The prize was awarded for the second time at EuroComb05, carrying a monetary award of 2500 Euros. The prize was funded with contributions from DIMATIA and COMBSTRU.

The Prize Committee for this edition consisted of Martin Aigner (Berlin), Peter Cameron (London) and Jaroslav Nešetřil (Prague).

The prize was awarded to DMITRY FEICHTNER-KOZLOV—for deep combinatorial results obtained by algebraic topology and particularly for the solution of a conjecture of Lovász.

Berlin and Prague, December 2006

Stefan Felsner

Marco Lübbecke

Jarik Nešetřil

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