Section 14: Mathematical Aspects of Computer Science

Invited Lectures

Wednesday, 19 August — H 2032

14:00 – 14:45 **Joan Feigenbaum,** AT&T Labs Research, Florham Park, USA
Games, Complexity Classes, and Approximation Algorithms *(I: p.167)*
Chair: Hans J. Prömel

15:00 – 15:45 **Toniann Pitassi,** University of Arizona, Tucson, USA
Combinatorial and algebraic techniques in proof complexity *(I: p.171)*
Chair: Helmut Alt

Thursday, 20 August — H 2032

16:15 – 17:00 **Madhu Sudan,** MIT, Cambridge, USA
Probabilistic checking of proofs *(I: p.173)*
Chair: Hans J. Prömel

17:15 – 18:00 **Johan Håstad,** Royal Institute of Technology, Stockholm, Sweden
On approximating NP-hard optimization problems *(I: p.169)*
Chair: Hans J. Prömel

Friday, 21 August — H 2032

14:00 – 14:45 **Emo Welzl,** ETH Zürich, Zürich, Switzerland
Halving Point Sets *(I: p.175)*
Chair: Helmut Alt

15:00 – 15:45 **Miklós Ajtai,** IBM Almaden Research Center, San Jose, USA
Worst-case Complexity, Average-case Complexity, and Lattice Problems *(I: p.165)*
Chair: Helmut Alt

Short Communications and Poster Sessions

Short Communications — Thursday, 20 August

Mathematical Aspects of Computer Science I — **MA 043**
Chair: Stefan Felsner

14:00 – 14:15 **Laxminarayan Das,** Texas A&M University, College Station, Texas, USA
Convexity to Invexity *(p.290)*

14:15 – 14:30 **Narayan C. Debnath,** Winona State University, Winona, MN, USA
RGPG: A Graph for Software Modeling *(p.290)*

14:30 – 14:45 **Victor Kasyanov,** Institute of Informatics Systems, Novosibirsk, Russia
Hierarchical graphs and visual processing *(p.292)*

Mathematical Aspects of Computer Science II — **MA 043**
Chair: Clemens Gröpl

15:00 – 15:15 **Guy Merlin Mbakop,** Institut für Mathematik, Humboldt–Universität, Berlin, Germany
An Efficient Algorithm for Solving Real Polynomial Equations: The Complete Intersection Case *(p.294)*

15:15 – 15:30 **Bernard Mourrain,** INRIA, SAGA, Sophia Antipolis, France
Multivariate polynomial equations and duality *(p.294)*

15:30 – 15:45 **Emil J Volcheck,** Baltimore, Maryland, USA
Computing with algebraic curves: a survey of recent results *(p.295)*

Short Communications — Friday, 21 August

Mathematical Aspects of Computer Science III — **MA 043**
Chair: Clemens Gröpl

16:15 – 16:30 **Barbu Gheorghe,** University of Pitești, Pitesti, Romania
A method for Computer Generation of Random Vectors *(p.289)*

16:30 – 16:45 **Sven Hartmann,** Universität Rostock, Rostock, Germany
New results on the consistency of cardinality constraints *(p.292)*

16:45 – 17:00 **Stefan Felsner,** Freie Universität Berlin, Berlin, Germany
The Linear-Extension-Diameter *(p.291)*

Mathematical Aspects of Computer Science IV — **MA 043**
Chair: Stefan Felsner

17:15 – 17:30 **Svetlana Asmuss,** University of Latvia, Riga, Latvia
On optimal algorithms of approximation under imprecise information *(p.289)*

17:30 – 17:45 **Clemens Gröpl,** Humboldt–Universität zu Berlin, Berlin, Germany
Random OBDDs *(p.292)*

17:45 – 18:00 **Andrew Adamatzky,** University of the West of England, Bristol, United Kingdom
On computation universality of excitable lattices

Short Communications — Saturday, 22 August

Mathematical Aspects of Computer Science V — **MA 043**
Chair: Hartmut Ehrig

14:00 – 14:15 **Bernd Gärtner,** ETH Zürich, Zürich, Switzerland
Abstract Objective Functions — From Geometry to Combinatorics in Linear Programming *(p.291)*

14:15 – 14:30 **Andreas Brieden,** Technische Universität München, Munich, Germany
Optimal Radii-Algorithms *(p.289)*

14:30 – 14:45 **Anuar Dusembaev,** National University of Kasakhstan, Almaty, Kasachstan
An operator approach to program segmentation *(p.290)*

Mathematical Aspects of Computer Science VI — **MA 043**
Chair: Andreas Brieden

15:00 – 15:15 **Hartmut Ehrig,** Technische Universität Berlin, Berlin, Germany
On the Role of Category Theory in Computer Science *(p.290)*

15:15 – 15:30 **Raja Natarajan,** Tata Institute of Fundamental Research, Bombay, India
Combinators for Concurrency *(p.294)*

15:30 – 15:45 **George Francis,** University of Illinois, Urbana, IL, USA
The Making of the Optiverse *(p.291)*

Poster Session **Saturday, 22 August**

16:15 – 18:00 **MA 144**

Giovanni Francesco Mascari, Coniglio Nazionale delle Ricerche, Rome, Italy
From TQFT to TQCT *(p.293)*

Roman Matuszewski, University of Białystok, Białystok, Poland
Journal of Formalized Mathematics — a collection of mechanically checked articles *(p.293)*