

PROGRAMME



CiE 2009 **Mathematical Theory and** **Computational Practice**

5th Conference on Computability in Europe
Heidelberg, Germany, July 19-24, 2009

Sunday, 19 July 2009

16:30 – REGISTRATION Foyer P

18:00 – 18:15 OPENING Lecture Hall P1

18:15 – 19:15 OPENING LECTURE (Chair: Benedikt Löwe) Lecture Hall P1

Mike Edmunds (Cardiff University)
The Antikythera Mechanism

19:15 – 21:00 WELCOME RECEPTION Foyer P

Monday, 20 July 2009

Overview

09:00 – 10:30	TUTORIAL L.1 (Chair: Wolfgang Merkle)	Lecture Hall P1
	Luca Trevisan (University of California, Berkeley) <i>Advanced Methods in Randomization (Part 1)</i>	
10:30 – 11:00	COFFEE	Foyer P
11:00 – 12:40	CONTRIBUTED TALKS (Sessions 1A – 1E)	
	<i>For the programme, see pages 5-6.</i>	
12:40 – 14:30	LUNCH	
14:30 – 16:00	SPECIAL SESSIONS (Sessions 1.1 – 3.1)	
	<i>For the programme, see page 4.</i>	
16:00 – 16:30	COFFEE	Foyer P
16:30 – 17:30	PLENARY LECTURE (Chair: Martin Otto)	Lecture Hall P1
	Phokion G. Kolaitis (IBM Almaden Research Center, San Jose) <i>Foundations and Applications of Schema Mappings</i>	

Monday, 20 July 2009

Special Sessions

1.1	Algorithmic Randomness (Part 1) Chair: Wolfgang Merkle	Lecture Hall M1
14:30 – 15:15	Laurent Bienvenu <i>On Computably Enumerable Random Reals</i>	
15:15 – 16:00	Bjørn Kjos-Hanssen <i>Members of Random Closed Sets</i>	
2.1	Computational Model Theory (Part 1) Chair: Andrei Morozov	Lecture Hall M2
14:30 – 15:15	Russell Miller <i>Spectra of Algebraic Fields and Subfields</i>	
15:15 – 16:00	Antonio Montalbán <i>Notes on the Jump of a Structure</i>	
3.1	Computation in Biological Systems (Part 1) Chair: Erzsébet Csuhaj-Varjú	Lecture Hall P2
14:30 – 15:15	Ion Petre <i>Computational Strategies for the Heat Shock Response</i>	
15:15 – 16:00	Francisco J. Romero-Campero <i>An Approach to the Engineering of Cellular Models Based on P Systems</i>	

Monday, 20 July 2009

Contributed Talks

SESSION 1A	Chair: Sergey Goncharov	Lecture Hall M1
11:00 – 11:20	Douglas Cenzer, Valentina Harizanov, and Jeffrey B. Remmel <i>Σ_1^0 and Π_1^0 Equivalence Structures</i>	
11:20 – 11:40	Kyung Il Lee <i>Computably Well-Founded ω-c.e. Linear Extensions</i>	
11:40 – 12:00	Pavel Semukhin <i>Prime Models of Finite Computable Dimension</i>	
12:00 – 12:20	Pavel Alaev <i>Computably Categorical Boolean Algebras Enriched by Ideals and Atoms</i>	
12:20 – 12:40	Alexander G. Melnikov <i>0^n-Categorical Completely Decomposable Torsion-Free Abelian Groups</i>	

SESSION 1B	Chair: Bjørn Kjos-Hanssen	Lecture Hall M2
11:00 – 11:20	Mathieu Hoyrup and Cristóbal Rojas <i>An Application of Martin-Löf Randomness to Effective Probability Theory</i>	
11:20 – 11:40	Willem L. Fouché <i>Fractals Generated by Algorithmically Random Brownian Motion</i>	
11:40 – 12:00	Cameron E. Freer and Daniel M. Roy <i>Computable Exchangeable Sequences Have Computable de Finetti Measures</i>	
12:00 – 12:20	Nathanael L. Ackerman, Cameron E. Freer, and Daniel M. Roy <i>The Complexity of Computable Conditional Probability</i>	
12:20 – 12:40	Jiang Xin, Shaoting Tang, Lili Ma, Zhanli Zhang, and Zhiming Zheng <i>Random Diffusion and Congestion on Weighted Complex Networks</i>	

SESSION 1C	Chair: Lars Kristiansen	Lecture Hall M3
11:00 – 11:20	John Case and Samuel E. Moelius III <i>Program Self-Reference in Constructive Scott Subdomains</i>	
11:20 – 11:40	Sara Quinn <i>Index Sets and Scott Sentences</i>	
11:40 – 12:00	Chung-Chih Li <i>Union Theorems in Type-2 Computation</i>	
12:00 – 12:20	Norihiro Kamide <i>Strong Normalization of Program-Indexed Lambda Calculus</i>	
12:20 – 12:40	Dag Normann <i>Sequential Functionals at Type Level 2</i>	

SESSION 1D	Chair: Lev Gordeev	Lecture Hall M4
11:00 – 11:20	Karel Chvalovsky <i>Independence of Axioms in Non-Classical Logics and ATP</i>	
11:20 – 11:40	Guido Fiorino <i>Taming Implications in Dummett Logic</i>	
11:40 – 12:00	Sergey Babenyshev, Vladimir Rybakov, and Renate Schmidt <i>Temporal Logic Treating Uncertainty and Interacting Agents with Time Indexes from \mathbb{Z}</i>	
12:00 – 12:20	Pieter Collins and Ivan S. Zapreev <i>Computable CTL for Discrete-Time and Continuous-Space Dynamic Systems</i>	
12:20 – 12:40	Yanfang Ma and Yixiang Chen <i>Two-thirds Bisimulation Indexes</i>	

SESSION 1E	Chair: Alessandra Carbone	Lecture Hall M5
11:00 – 11:20	Ömer Egecioglu and Oscar H. Ibarra <i>On Stateless Multicounter Machines</i>	
11:20 – 11:40	Benedek Nagy <i>On a Hierarchy of $5^1 \rightarrow 3^1$ Sensing WK Finite Automata Languages</i>	
11:40 – 12:00	Thomas Zerjatke <i>Solving a PSPACE-Complete Problem with DNA Computing</i>	
12:00 – 12:20	T. Hinze, R. Fabler, G. Escuela, B. Ibrahim, and S. Schuster <i>Computation by Synthetic Cell Signaling and Oscillating Processes Modelled Using Mass-Action Kinetics</i>	
12:20 – 12:40	Ian Pratt-Hartmann and Ivo Düntsch <i>Functions Definable by Arithmetic Circuits</i>	

Tuesday, 21 July 2009

Overview

09:00 – 10:30	TUTORIAL 1.2 (Chair: Wolfgang Merkle)	Lecture Hall P1
	Luca Trevisan (University of California, Berkeley) <i>Advanced Methods in Randomization (Part 2)</i>	
10:30 – 11:00	COFFEE	Foyer P
11:00 – 12:40	CONTRIBUTED TALKS (Sessions 2A – 2E)	
	<i>For the programme, see pages 9-10.</i>	
12:40 – 14:30	LUNCH	
14:30 – 16:00	SPECIAL SESSIONS (Sessions 1.2 – 3.2)	
	<i>For the programme, see page 8.</i>	
16:00 – 16:30	COFFEE	Foyer P
16:30 – 17:30	PLENARY LECTURE (Chair: Vasco Brattka)	Lecture Hall P1
	Jeremy Avigad (Carnegie Mellon University, Pittsburgh) <i>Computability in Ergodic Theory</i>	
17:35 – 18:20	WOMEN IN COMPUTABILITY WORKSHOP Lecture Hall P2 Coordinators: Paola Bonizzoni and Elvira Mayordomo	

Tuesday, 21 July 2009

Special Sessions

1.2	Algorithmic Randomness (Part 2) Chair: Elvira Mayordomo	Lecture Hall M1
14:30 – 15:15	Jack H. Lutz <i>A Divergence Formula for Randomness and Dimension</i>	
15:15 – 16:00	Nikolay Vereshchagin <i>Algorithmic Minimal Sufficient Statistic Revisited</i>	
2.2	Computational Model Theory (Part 2) Chair: Julia F. Knight	Lecture Hall M2
14:30 – 15:15	Ekaterina B. Fokina <i>Equivalence Relations on Classes of Computable Structures</i>	
15:15 – 16:00	Sergey Goncharov <i>Computable Numberings of Hyperarithmetical Sets and Complexity of Countable Models</i>	
3.2	Computation in Biological Systems (Part 2) Chair: Alessandra Carbone	Lecture Hall P2
14:30 – 15:15	David R. Westhead <i>Bayesian Data Integration for Predicting Gene Function in Malaria</i>	
15:15 – 16:00	Alberto Policriti <i>Stochastic Programs and Hybrid Automata for (Biological) Modeling</i>	

Tuesday, 21 July 2009

Contributed Talks

SESSION 2A	Chair: Douglas Cenzler	Lecture Hall M1
11:00 – 11:20	Chris Conidis <i>The Reverse Mathematics of Artinian Rings</i>	
11:20 – 11:40	Kentaro Sato <i>An Impact of Infinity: Comparison of Two Reverse Mathematics</i>	
11:40 – 12:00	Paul Brodhead and Bjørn Kjos-Hanssen <i>The Strength of the Grätzer-Schmidt Theorem</i>	
12:00 – 12:20	Peter M. Gerdes <i>n-Tardy Sets</i>	
12:20 – 12:40	Grzegorz Herman and Michael Soltys <i>Unambiguous Functions in Logarithmic Space</i>	

SESSION 2B	Chair: Andrei Morozov	Lecture Hall M2
11:00 – 11:20	Oleg V. Kudinov, Victor L. Selivanov, and Anton V. Zhukov <i>Definability of Closure Operations in the h-Quasiorder of Labeled Forests</i>	
11:20 – 11:40	Oleg V. Kudinov and Victor L. Selivanov <i>A Gandy Theorem for Abstract Structures and Applications to First-Order Definability</i>	
11:40 – 12:00	Andreas Weiermann <i>A Computation of the Maximal Order Type of the Term Ordering on Finite Multisets</i>	
12:00 – 12:20	Alexandra A. Soskova and Ivan N. Soskov <i>Some Applications of the Jump Inversion Theorem for the Degree Spectra</i>	
12:20 – 12:40	Alexey Stukachev <i>On Semilattices of Σ-Degrees of Structures</i>	

SESSION 2C	Chair: Olivier Bournez	Lecture Hall M3
11:00 – 11:20	J. Raymundo Marcial-Romero, Claudia Zepeda, J. A. Hernández, Héctor A. Montes-Venegas, and Davin Linares <i>An Implementation of Exact Real Number Computation Based on LRT</i>	
11:20 – 11:40	Thomas Anberrée <i>First-Order Universality for Real Programs</i>	
11:40 – 12:00	Pieter Collins <i>Computable Types for Dynamic Systems</i>	
12:00 – 12:20	Martín Escardó <i>Computability of Continuous Solutions of Higher-Type Equations</i>	
12:20 – 12:40	Vasco Brattka and Guido Gherardi <i>Weihrauch Degrees, Omniscience Principles and Weak Computability</i>	

SESSION 2D	Chair: Peter Fejer	Lecture Hall M4
11:00 – 11:20	David R. Bélanger <i>Structures of Some Strong Reducibilities</i>	
11:20 – 11:40	Philipp Bodewig <i>Initial Segments of C.E. ibT-Degrees</i>	
11:40 – 12:00	Jan Reimann <i>Algorithmic Reducibilities and Borel Equivalence Relations</i>	
12:00 – 12:20	Sanjay Jain, Frank Stephan, and Jason Teutsch <i>Index Sets and Universal Numberings</i>	
12:20 – 12:40	Grégory Lafitte and Michael Weiss <i>Constructing New Aperiodic Self-Simulating Tile Sets</i>	

SESSION 2E	Chair: Erzsébet Csuhaj-Varjú	Lecture Hall M5
11:00 – 11:20	James Lambert <i>The Relationship Between Measurability and Computability</i>	
11:20 – 11:40	Hendrik Blockeel and Robert Brijder <i>Learning Non-Confluent NLC Graph Grammar Rules</i>	
11:40 – 12:00	Ekaterina Komendantskaya <i>Parallel Term Rewriting in Neural Networks</i>	
12:00 – 12:20	Guénola Drillon <i>Combinatorics, Chromosomal Rearrangements and Reconstruction of Ancestral Genomes</i>	
12:20 – 12:40	Ulavappa B. Angadi and M.Venkatesulu <i>Automatic Classification of Protein Sequences into Families Using Elongated K-Mean Spectral Clustering</i>	

Wednesday, 22 July 2009

Overview

09:00 – 11:00	PLENARY LECTURES (Chair: Peter van Emde Boas)	Lecture Hall P1
09:00 – 10:00	Manindra Agrawal (Indian Institute of Technology, Kanpur) <i>The Isomorphism Conjecture</i>	
10:00 – 11:00	Rafael Sorkin (Perimeter Institute for Theoretical Physics, Waterloo) <i>Logic : the Quantum :: Geometry : Gravity</i>	
11:00 – 11:30	COFFEE	Foyer P
11:30 – 12:50	CONTRIBUTED TALKS (Sessions 3A – 3E)	
	<i>For the programme, see pages 13-14.</i>	
12:50 – 14:30	LUNCH	
14:30 – 16:00	SPECIAL SESSIONS (Sessions 4.1 – 6.1)	
	<i>For the programme, see page 12.</i>	
16:00 – 16:30	COFFEE	Foyer P
16:30 – 17:30	PLENARY LECTURE (Chair: Richard Shore)	Lecture Hall P1
	Andrea Sorbi (University of Siena) <i>Computing Using Positive Information</i>	
17:35 – 18:30	COMPUTABILITY IN EUROPE ANNUAL GENERAL MEETING	Lecture Hall P1
19:30 -	CONFERENCE DINNER	

Wednesday, 22 July 2009

Special Sessions

4.1	Optimization and Approximation (Part 1) Chair: Magnús M. Halldórsson	Lecture Hall P2
14:30 – 15:15	Harald Räcke <i>Survey on Oblivious Routing Strategies</i>	
15:15 – 16:00	Jean Cardinal <i>Minimum Entropy Combinatorial Optimization Problems</i>	
5.1	Philosophical and Mathematical Aspects of Hypercomputation (Part 1) Chair: Philip Welch	Lecture Hall M2
14:30 – 15:15	Samuel Coskey <i>Infinite-Time Turing Machines and Borel Reducibility</i>	
15:15 – 16:00	Oron Shagrir <i>On the Relations Between Effective, Hyper-, and Physical Computation</i>	
6.1	Relative Computability (Part 1) Chair: Rod Downey	Lecture Hall M1
14:30 – 15:15	Richard A. Shore <i>Domination, Forcing, Array Nonrecursiveness and Relative Recursive Enumerability</i>	
15:15 – 16:00	George Barmpalias <i>Tracing and Domination in the Turing Degrees</i>	

Wednesday, 22 July 2009

Contributed Talks

SESSION 3A	Chair: Armin Hemmerling	Lecture Hall M1
11:30 – 11:50	Klaus Meer <i>On Ladner's Result for a Class of Real Machines with Restricted Use of Constants</i>	
11:50 – 12:10	Tobias Gärtner and Günter Hotz <i>Computability of Analytic Functions with Analytic Machines</i>	
12:10 – 12:30	Christine Gaßner <i>Hierarchies below the Halting Problem for Additive Machines</i>	
12:30 – 12:50	Arno Pauly <i>Real Hypercomputation with Infinite Oracle Queries</i>	

SESSION 3B	Chair: Frank Stephan	Lecture Hall M2
11:30 – 11:50	Kojiro Higuchi and Takayuki Kihara <i>Notions of Reducibility for Mass Problems</i>	
11:50 – 12:10	Paul Shafer <i>A Characterization of the Join-Irreducible Medvedev Degrees</i>	
12:10 – 12:30	Andrew Lewis, André Nies, and Andrea Sorbi <i>The First Order Theories of the Medvedev and Muchnik Lattices</i>	
12:30 – 12:50	Douglas Cenzer, Rebecca Weber, and Guohua Wu <i>Immunity for Closed Sets</i>	

SESSION 3C	Chair: Ian Pratt-Hartmann	Lecture Hall M3
11:30 – 11:50	Stefan Dantchev and Barnaby Martin <i>Cutting Planes and the Parameter Cutwidth</i>	
11:50 – 12:10	Jingchao Chen <i>Iterative Rounding for the Closest String Problem</i>	
12:10 – 12:30	Chung-Chih Li <i>Random Reference-Switching Functions</i>	
12:30 – 12:50	Alla Sirokofskich <i>Decidability of Sub-Theories of Polynomials over a Finite Field</i>	

SESSION 3D	Chair: Jean Cardinal	Lecture Hall M4
11:30 – 11:50	Michael Fellows, Juraj Hromkovic, Frances Rosamond, and Monika Steinová <i>Fixed-Parameter Tractability, Relative Kernelization and the Effectivization of Structural Connections</i>	
11:50 – 12:10	Yijia Chen, Jörg Flum, and Moritz Müller <i>Lower Bounds for Kernelizations and Other Preprocessing Procedures</i>	
12:10 – 12:30	Jiamou Liu <i>Dynamic Algorithms for Reachability Games</i>	
12:30 – 12:50	Soumya Paul, R. Ramanujam, and Sunil Simon <i>Stability Under Strategy Switching</i>	

SESSION 3E	Chair: Josef Berger	Lecture Hall M5
11:30 – 11:50	J. B. Paris and A. Vencovská <i>A General Representation Theorem for Probability Functions Satisfying Spectrum Exchangeability</i>	
11:50 – 12:10	Lars Kristiansen and Bedeho Mesghina Wolde Mender <i>The Semantics and Complexity of Successor-Free Nondeterministic Gödel's T and PCF</i>	
12:10 – 12:30	Ján Kl'uka and Paul J. Voda <i>A Simple and Practical Valuation Tree Calculus for First-Order Logic</i>	
12:30 – 12:50	Christophe Fouqueré <i>Computing Over Non-Linear Structures</i>	

Thursday, 23 July 2009

Overview

09:00 – 10:30	TUTORIAL II.1 (Chair: Arnold Beckmann) Lecture Hall P1
	Pavel Pudlák (Czech Academy of Sciences, Prague) <i>Proof Complexity (Part 1)</i>
10:30 – 11:00	COFFEE Foyer P
11:00 – 12:40	CONTRIBUTED TALKS (Sessions 4A – 4E)
	<i>For the programme, see pages 17-18.</i>
12:40 – 14:30	LUNCH
14:30 – 16:00	SPECIAL SESSIONS (Sessions 4.2 – 6.2)
	<i>For the programme, see page 16.</i>
16:00 – 16:30	COFFEE Foyer P
16:30 – 17:30	PLENARY LECTURE (Chair: Dag Normann) Lecture Hall P1
	Peter Koepke (University of Bonn) <i>Ordinal Computability</i>

Thursday, 23 July 2009

Special Sessions

4.2	Optimization and Approximation (Part 2) Lecture Hall P2 Chair: Gerhard Reinelt
14:30 – 15:15	Friedrich Eisenbrand <i>Integer Programming and Real-Time Scheduling</i>
15:15 – 16:00	Marc Uetz <i>From Optimal Algorithms to Optimal Mechanisms</i>
5.2	Philosophical and Mathematical Aspects of Hypercomputation (Part 2) Lecture Hall M2 Chair: Philip Welch
14:30 – 15:15	Mark Hogarth <i>An Outline of a New Philosophy of Mathematics</i>
15:15 – 16:00	Tim Button <i>Hyperloops Do Not Threaten the Notion of an Effective Procedure</i>
6.2	Relative Computability (Part 2) Lecture Hall M1 Chair: Alexandra A. Soskova
14:30 – 15:15	Keng Meng Ng <i>Limits on Jump Inversion for Strong Reducibilities</i>
15:15 – 16:00	Hristo Ganchev <i>Definability in the Local Theory of the omega-Enumeration Degrees</i>

Thursday, 23 July 2009

Contributed Talks

SESSION 4A	Chair: Nikolay Vereshchagin	Lecture Hall M1
11:00 – 11:20	Marius Zimand <i>On Generating Independent Random Strings</i>	
11:20 – 11:40	Kohtaro Tadaki <i>Chaitin Ω Numbers and Halting Problems</i>	
11:40 – 12:00	Paul Brodhead and Bjørn Kjos-Hanssen <i>Numberings and Randomness</i>	
12:00 – 12:20	Paul Brodhead and Douglas Cenzer <i>Effective Capacity and Randomness of Closed Sets</i>	

SESSION 4B	Chair: Benedikt Löwe	Lecture Hall M2
11:00 – 11:20	Trifon Trifonov <i>Dialectica Interpretation with Fine Computational Control</i>	
11:20 – 11:40	Pavol Safarik <i>On the Computational Content of Bolzano-Weierstraß</i>	
11:40 – 12:00	Gyesik Lee <i>Relationship Between Kanamori-McAloon Principle and Paris-Harrington Theorem</i>	
12:00 – 12:20	Josef Berger <i>A Characterisation of $BD-N$</i>	
12:20 – 12:40	Stefan Hetzl <i>On the Form of Witness Terms</i>	

SESSION 4C	Chair: Victor Selivanov	Lecture Hall M3
11:00 – 11:20	Florian Pelupessy and Andreas Weiermann <i>Ackermannian Lower Bounds for Lengths of Bad Sequences of Monomial Ideals over Polynomial Rings in Two Variables</i>	
11:20 – 11:40	L. Gordeev and A. Weiermann <i>Elaborating Critical Points of Phase Transitions</i>	
11:40 – 12:00	Michiel De Smet and Andreas Weiermann <i>Phase Transitions Related to the Pigeonhole Principle</i>	
12:00 – 12:20	T. Kotek and J. A. Makowsky <i>Definability of Combinatorial Functions</i>	

SESSION 4D	Chair: Valentina Harizanov	Lecture Hall M4
11:00 – 11:20	Matthew B. Giorgi, Thomas F. Kent, Andrew E. M. Lewis, and Andrea Sorbi <i>Empty Intervals of Enumeration Degrees and Strong Minimal Covers</i>	
11:20 – 11:40	Charles M. Harris <i>Noncuppable Enumeration Degrees Via Finite Injury</i>	
11:40 – 12:00	Mariya I. Soskova and Ivan N. Soskov <i>Embedding Countable Partial Orderings in Degree Structures</i>	
12:00 – 12:20	Angel V. Ditchev <i>On Least Enumerations of Partial Structures</i>	
12:20 – 12:40	Kuanysh Abeshev and Serikzhan Badaev <i>A Note on Universal Numberings</i>	

SESSION 4E	Chair: Rafael Sorkin	Lecture Hall M5
11:00 – 11:20	Ross Duncan and Simon Perdrix <i>Graph States and the Necessity of Euler Decomposition</i>	
11:20 – 11:40	Craziana Conte <i>Modelling Quantum Information by Chu Spaces</i>	
11:40 – 12:00	Mark S. Everitt, Martin L. Jones, Vivien M. Kendon, Neil B. Lovett, and Robert C. Wagner <i>Quantum and Classical Analogue Computation Using Microwaves</i>	
12:00 – 12:20	P. Zizzi and E. Pessa <i>On the Role of Quantum Metalanguage in Brain Quantum Computation</i>	
12:20 – 12:40	Mario Velez and Juan Ospina <i>Generalized Temperley-Lieb Algebras and Quantum Computation</i>	

Friday, 24 July 2009

Overview

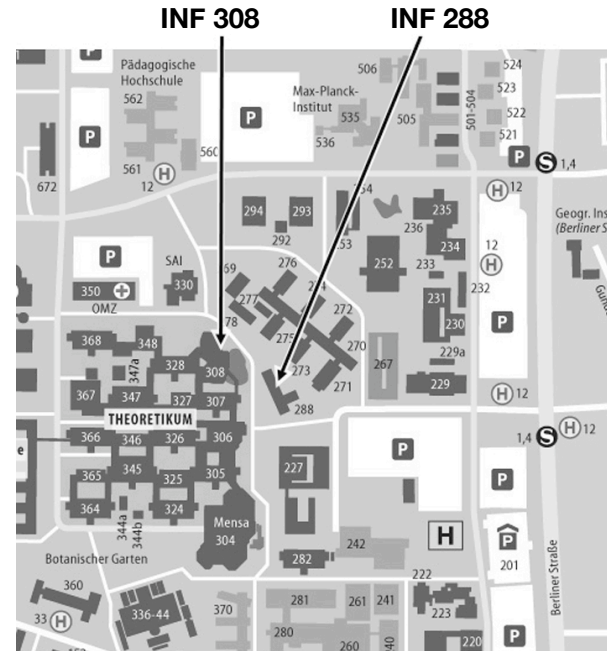
09:00 – 10:30	TUTORIAL II.2 (Chair: Arnold Beckmann)	Lecture Hall P1
	Pavel Pudlák (Czech Academy of Sciences, Prague) Proof Complexity (<i>Part 2</i>)	
10:30 – 11:00	COFFEE	Foyer P
11:00 – 12:00	CONTRIBUTED TALKS (Sessions 5A – 5D)	
	<i>For the programme, see pages 20-21.</i>	
12:10 – 13:10	PLENARY LECTURE (Chair: Klaus Ambos-Spies)	Lecture Hall P1
	Vijay V. Vazirani (Georgia Institute of Technology, Atlanta) <i>Combinatorial Algorithms for Convex Programs Capturing Market Equilibria and Nash Bargaining Solutions</i>	
13:10 – 13:20	CLOSING	Lecture Hall P1
13:30 –	LUNCH	

Friday, 24 July 2009

Contributed Talks

SESSION 5A	Chair: Peter van Emde Boas	Lecture Hall M1
11:20 – 11:40	Hannah Bayer and Markus Nebel <i>Evaluating Algorithms According to their Energy Consumption</i>	
11:40 – 12:00	Timur Bakibayev <i>Comparing Nontriviality for the Exponential Time Classes E and EXP</i>	
SESSION 5B	Chair: Antonio Montalbán	Lecture Hall M2
11:00 – 11:20	Armin Hemmerling <i>Function Operators Spanning the Arithmetical and the Polynomial Hierarchy</i>	
11:20 – 11:40	Jiang Liu, Shengling Wang, and Guohua Wu <i>Infima of d.r.e. Degrees</i>	
11:40 – 12:00	G. Michele Pinna <i>Petri Nets Unfoldings and the Individual/Collective Token Philosophy</i>	
SESSION 5C	Chair: Andreas Weiermann	Lecture Hall M3
11:00 – 11:20	Gunther Mainhardt <i>Some Properties of Traces as a Lattice under the Set Theoretic Inclusion</i>	
11:20 – 11:40	Manuel Bodirsky, Miki Hermann, and Florian Richoux <i>Complexity of Existential Positive First-Order Logic</i>	
11:40 – 12:00	Binghui Guo, Wei Wei, and Zhiming Zheng <i>Constraint Message Propagation Dynamics of Nonlinear Boolean Equations</i>	

SESSION 5D	Chair: Barry Cooper	Lecture Hall M4
11:00 – 11:20	Mathias Barra and Philipp Gerhardy <i>Skolem + Tetration is Well-Ordered</i>	
11:20 – 11:40	Mathias Barra <i>Relativised Detour Degrees</i>	
11:40 – 12:00	Amir ben-Amram and Lars Kristiansen <i>The Limits of Decidability and Tractability in Growth-Rate Analysis for Programs</i>	



- INF 308 Physics Lecture Theatre (P)**
 - Lecture Halls P1 – P2
 - Foyer P

- INF 288 Mathematical Institute (M)**
 - Lecture Halls M1 – M5