

Table of Contents

Foreword	vii
Conference organization	viii
External reviewers	ix
List of authors	x
Abstract of invited talks	xi
On Solutions of Linear Functional Systems	1
<i>Sergei A. Abramov, Manuel Bronstein.</i>	
Minimal Decomposition of Indefinite Hypergeometric Sums	7
<i>Sergei A. Abramov, M. Petkovsek.</i>	
On the Barnes function	15
<i>V. S. Adamchik.</i>	
Generic Ideals and Moreno-Socías Conjecture	21
<i>Edith Aguirre, Abdul Salam Jarrah, Reinhard Laubenbacher.</i>	
Hybrid Sparse Resultant Matrices for Bivariate Systems	24
<i>Carlos D'Andrea, Ioannis Z. Emiris.</i>	
Maple's Evaluation Process as Constraint Contextual Rewriting	32
<i>Alessandro Armando, Clemens Ballarin.</i>	
PARDI !	38
<i>François Boulier, François Lemaire, Marc Moreno Maza</i>	
Residual Resultant over the Projective Plane and the Implicitization Problem	48
<i>Laurent Busé.</i>	
Families of Estimable Terms	56
<i>Massimo Caboara, Lorenzo Robbiano.</i>	
Computing All Factorizations in $\mathbb{Z}_N[x]$	64
<i>Howard Cheng, George Labahn.</i>	
Computation of Minimal Generators of Ideals of Fat Points	72
<i>Francesca Cioffi, Ferruccio Orecchia.</i>	
Scalable Parallel Coset Enumeration Using Bulk Definition	77
<i>Gene Cooperman, Victor Grinberg.</i>	
Towards Factoring Bivariate Approximate Polynomials	85
<i>Robert M. Corless, Mark W. Giesbrecht, Mark van Hoeij, Ilias S. Kotsireas, Stephen M. Watt.</i>	
On Liouvillian Solutions of Linear Differential Equations of Order 4 and 5	93
<i>Olivier Cormier.</i>	
Hybrid Computation	101
<i>Jean Della Dora, Aude Maignan, Mihaela Mirica-Ruse, Sergio Yovine.</i>	
Modeling Inheritance as Coercion in a Symbolic Computation System	109
<i>César Domínguez, Julio Rubio.</i>	
Computation of the Radical of Polynomial Ideals over Fields of Arbitrary Characteristic	116
<i>Elisabetta Fortuna, Patrizia Gianni, Barry Trager.</i>	
Polynomial Root Finding Using Iterated Eigenvalue Computation	121
<i>Steven Fortune.</i>	

On Computer-Assisted Classification of Coupled Integrable Equations	129
<i>Mikhail V. Foursov, Marc Moreno Maza.</i>	
Semi-Numerical Determination of Irreducible Branches of a Reduced Space Curve	137
<i>André Galligo, David Rupprecht.</i>	
A Generalized Graeffe's Iteration for Evaluating Polynomials and Rational Functions	143
<i>Luca Gemignani.</i>	
Symbolic-Interval Cooperation in Constraint Programming	150
<i>Laurent Granvilliers, Eric Monfroy, Frédéric Benhamou.</i>	
Unirational Fields of Transcendence Degree One and Functional Decomposition	167
<i>Jaime Gutierrez, Rosario Rubio, David Sevilla.</i>	
Solvability by Radicals from an Algorithmic Point of View	175
<i>G. Hanrot, F. Morain.</i>	
Strongly-Local Reductions and the Complexity/Efficient Approximability of Algebra and Optimization on Abstract Algebraic Structures	183
<i>Harry B. Hunt, Madhav V. Marathe, Richard E. Stearns.</i>	
The Membership Problem for Ideals of Binomial Skew Polynomial Rings	192
<i>Liu Jinwang, Liu Zhuojun, Liu Xiaoqi, Wang Mingsheng.</i>	
Diagnosing and Correcting Student's Misconceptions in an Educational Computer Algebra System	195
<i>Neven Jurkovic.</i>	
Dimensional Analysis in Computer Algebra	201
<i>Raya Khanin.</i>	
Hybrid System for Multi-language and Multi-environment Generation of Numerical Codes	209
<i>Joze Korelc.</i>	
Towards Approximations which Preserve Integrals	217
<i>Elizabeth L. Mansfield, Peter E. Hydon,</i>	
On Propagation of Equational Constraints in CAD-Based Quantifier Elimination	223
<i>Scott McCallum.</i>	
A Linear Space Algorithm for Computing the Hermite Normal Form	231
<i>Daniele Micciancio, Bogdan Warinschi.</i>	
Remarks On Gröbner Basis For Ideals Under Composition	237
<i>Wang Mingsheng, Liu Zhuojun.</i>	
Algorithms for Trigonometric Polynomials	245
<i>Jamie Mulholland, Michael Monagan.</i>	
Univariate Polynomials: Nearly Optimal Algorithms for Factorization and Rootfinding	253
<i>Victor Y. Pan.</i>	
New Complexity Bounds for Cylindrical Decompositions of Sub-Pfaffian Sets	268
<i>Savvas Pericleous, Nicolai Vorobjov.</i>	
A Multivariate Weierstrass Iterative Rootfinder	276
<i>Olivier Ruatta.</i>	
Approximate Multivariate Polynomial Factorization Based on Zero-Sum Relations	284
<i>Tateaki Sasaki.</i>	
Discrete Comprehensive Gröbner Bases	292
<i>Yosuke Sato, Akira Suzuki.</i>	

Black Box Methods for Least Squares Problems	297
<i>B. D. Saunders.</i>	
On a Parallel Lehmer-Euclid GCD Algorithm	303
<i>Sidi Mohammed Sedjelmaci.</i>	
A Probabilistic Algorithm to Test Local Algebraic Observability in Polynomial Time	309
<i>Alexandre Sedoglavic.</i>	
Computation of the Degree of Rational Maps Between Curves	317
<i>J. Rafael Sendra, Franz Winkler.</i>	
Fast Computation of Linear Generators for Matrix Sequences and Application to the Block Wiedemann Algorithm	323
<i>Emmanuel Thomé.</i>	
Irreducible Trinomials over Finite Fields	332
<i>Joachim von zur Gathen.</i>	
IAMC Architecture and Prototyping: A Progress Report	337
<i>P. Wang, S. Gray, N. Kajler, D. Lin, W. Liao, X. Zou.</i>	
On Computational Properties of Chains of Recurrences	345
<i>Eugene V. Zima.</i>	