

Conference Program

- A registration desk will be located in front of the Main Auditorium in Bldg 1 during the conference. You can get your banquet ticket at the registration desk.
- Plenary talks and business meetings will be held at the main auditorium.
- Shuttle buses will run between KIAS and the banquet place.
- Light meals will be served in the lobby every morning, and four lunch tickets will come with your name tag, which you can use at the second floor of the Union building.

Tuesday, July 28

Begin	End	International Conference Hall, KIAS
9:00		Tutorial 1: Session chair Lihong Zhi Jean-Charles Faugère (INRIA Rocquencourt, France) <i>Symbolic Computation and Cryptology</i>
	11:30	
11:30	13:00	LUNCH
13:00		Tutorial 2: Session chair Mohab Safey El Din Markus Schweighofer (University of Rennes, France) <i>Symbolic Computation and Optimization</i>
	15:30	
15:30	16:00	COFFEE BREAK
16:00		Tutorial 3: Session chair Xiao-shan Gao Chee Yap (New York University, USA) <i>Symbolic Computation and Computational Geometry</i>
	18:30	
19:00		WELCOME RECEPTION, Emerald Room, 4th floor, Koreana Hotel

Wednesday July 29

Begin	End	Room A (Main Auditorium)	Room B (International Conference Hall)
9:00	9:30	OPENING	
9:30		Session chair: Jeremy Johnson	
	10:30	Plenary invited talk: Markus Püschel (Carnegie Mellon University, USA) <i>Automatic Synthesis of High Performance Mathematical Programs</i>	
10:35	11:00	COFFEE BREAK	
		Session chair: Clement Pernet	Session chair: Franz Winkler
11:00		Fredric Chyzak, Manuel Kauers and Bruno Salvy. <i>A Non-Holonomic Systems Approach to Special Function Identities</i>	Yosuke Sato and Akira Suzuki. <i>Computation of Inverses in Residue Class Rings of Parametric Polynomial Ideals</i>
	11:25		
11:25		Miroslav Halas, Ulle Kotta, Ziming Li, Hauifu Wang and Chunming Yuan. <i>Submersive Rational Difference Systems and Formal Accessibility</i>	Eduardo Saenz-de-Cabezón and Anna Bigatti. <i>Computation of the $(n-1)$-st Koszul homology of monomial ideals and related algorithms</i>
	11:50		
11:50		Alexandre Benoit and Bruno Salvy. <i>Chebyshev Expansions for Solutions of Linear Differential Equations</i>	Viktor Levandovskyy, Jorge Martín Morales and Wolf Daniel Andres. <i>Principal Intersection and Bernstein-Sato Polynomial of Affine Variety</i>
	12:15		
12:15	14:00	LUNCH	
		Session chair: Mark Giesbrecht	Session chair: Adam Strzebonski
14:00		Arne Storjohann. <i>Integer matrix rank certification</i>	Christopher Brown. <i>Fast Simplifications for Tarski Formulas</i>
	14:25		
14:25		Ivan Morel, Damien Stehle and Gilles Villard. <i>H-LLL: Using Householder Within LLL</i>	Hoon Hong and Mohab Safey El Din. <i>Variant Real Quantifier Elimination: Algorithm and Application</i>
	14:50		
14:50		David Saunders and Bryan Youse. <i>Large Matrix, Small Rank</i>	Christopher Brown and Scott McCallum. <i>On Delineability of Varieties in CAD-Based Quantifier Elimination with Equational Constraints</i>
	15:15		
15:15	15:45	COFFEE BREAK	
		Session chair: Wen-shin Lee	Session chair: Volker Sorge
15:45		Jean-Charles Faugère and Perret Ludovic. <i>High Order Derivatives and Decomposition of Multivariate Polynomials</i>	Daniel Kunkle and Gene Cooperman. <i>Biased Tadpoles: A Fast Algorithm for Centralizers in Large Matrix Groups</i>
	16:10		
16:10		Joachim von zur Gathen. <i>Counting decomposable univariate polynomials</i>	Ana Romero, Graham Ellis and Julio Rubio. <i>Interoperating between Computer Algebra systems: computing homology of groups with Kenzo and GAP</i>
	16:35		
17:00	18:00	ISSAC Business Meeting chaired by Xiao-shann Gao	
18:00	19:00	SIGSAM Business Meeting chaired by Jeremy Johnson	

Thursday, July 30

Begin	End	Room A (Main Auditorium)	Room B (International Conference Hall)
9:00		Session chair: Erich Kaltofen Plenary invited talk: Tetsuo Ida (University of Tsukuba, Japan) <i>Symbolic and Algebraic Methods in Computational Origami</i>	
10:00	10:35	COFFEE BREAK	
10:35	11:00	Session chair: Stephen Watt Li Xin, Marc Moreno Maza and Wei Pan. <i>Computations modulo Regular Chains</i>	Session chair: Wolfram Koepf Alin Bostan and Eric Schost. <i>Fast algorithms for differential equations in positive characteristic</i>
11:00	11:25	Brice Boyer, Jean-Guillaume Dumas, Clement Pernet and Wei Zhou. <i>Memory efficient scheduling of Strassen-Winograd's matrix multiplication algorithm</i>	Moulay Barkatou, Thomas Cluzeau and Carole El Bacha. <i>Algorithms for Regular Solutions of Higher-Order Linear Differential Systems</i>
11:25	11:50	Roman Pearce and Michael Monagan. <i>Parallel Sparse Polynomial Multiplication Using Heaps</i>	Georg Regensburger, Markus Rosenkranz and Johannes Middeke. <i>A Skew Polynomial Approach to Integro-Differential Operators</i>
11:50	12:15	Daniel S. Roche. <i>Space- and Time-Efficient Polynomial Multiplication</i>	YongJae Cha and Mark van Hoeij. <i>Liouvillian Solutions of Irreducible Linear Difference Equations</i>
12:15	14:00	LUNCH; JSC bi-annual Editorial Board meeting	
14:00	14:25	Session chair: Howard Cheng George Labahn and Bernhard Beckermann. <i>Fraction-Free Computation of Simultaneous Pade Approximants</i>	Session chair: Scott McCallum Chee Yap and W. Dale Brownawell. <i>Lower Bounds for Zero-Dimensional Projections</i>
14:25	14:50	George Labahn and Wei Zhou. <i>Efficient Computation of Order Bases</i>	Jin-San Cheng, Xiao-Shan Gao and Jia Li. <i>Root Isolation for Bivariate Polynomial Systems with Local Generic Position Method</i>
14:50	15:15	Alan Sexton, Volker Sorge and Stephen Watt. <i>Computing with Abstract Matrix Structures</i>	Masaaki Kanno, Kazuhiro Yokoyama, Hirokazu Anai and Shinji Hara. <i>Solution of Algebraic Riccati Equations Using the Sum of Roots</i>
15:15	15:40	Ioannis Emiris and Angelos Mantzaflaris. <i>Multihomogeneous resultant matrices for systems with scaled support</i>	Jean-Charles Faugere and Sajjad Rahmany. <i>Solving systems of polynomial equations with symmetries using SAGBI-Groebner bases</i>
15:40	16:10	COFFEE BREAK; GROUP PHOTO SESSION	
16:10		POSTER SESSION*	SOFTWARE PRESENTATIONS*
	18:00	BANQUET AND AWARDS PRESENTATION**, Vista Hall, Sheraton Grand Walkerhill Hotel	

* With pizza and beer.

** Shuttle buses will leave at the KIAS main gate at 5:50 p.m.

Friday, July 31

Begin	End	Room A (Main Auditorium)	Room B (International Conference Hall)
9:00		Session chair: Hyungju Park Plenary invited talk: Marc Giusti (École Polytechnique, France)	
	10:00	<i>A Gröbner Free Alternative to Solving and a Geometric Analog of Cook's Thesis</i>	
10:00	10:35	COFFEE BREAK	
		Session chair: Gene Cooperman	Session chair: Tateaki Sasaki
10:35		Zhonggang Zeng. <i>The Approximate Irreducible Factorization of a Univariate Polynomial Revisited</i>	Seyed Mohammad Mahdi Javadi and Michael Monagan. <i>On Factorization of Multivariate Polynomials over Algebraic Number and Function Fields</i>
	11:00		
11:00		Akira Terui. <i>An Iterative Method for Calculating Approximate GCD of Univariate Polynomials</i>	Jean-Guillaume Dumas, Clement Pernet and David Saunders. <i>On finding multiplicities of characteristic polynomial factors of black-box matrices</i>
	11:25		
11:25		Kurt Mehlhorn and Michael Sagraloff. <i>A Deterministic Descartes Algorithm for Real Polynomials</i>	Luca De Feo and Eric Schost. <i>Fast arithmetics in Artin-Schreier towers over finite fields</i>
	11:50		
11:50		Adam Strzebonski. <i>Real Root Isolation for Tame Elementary Functions</i>	Guenael Renault, Kazuhiro Yokoyama and Sébastien Orange. <i>Computation Schemes for Splitting Fields of Polynomials</i>
	12:15		
12:15	14:00	LUNCH; 13:15-13:45 Maplesoft promotional presentation by John May	
		Session chair: Hiroshi Sekigawa	Session chair: André Galligo
14:00		Martin Mevissen, Kosuke Yokoyama and Nobuki Takayama. <i>Solutions of polynomial systems derived from the steady cavity flow problem</i>	Gabor Ivanyos, Marek Karpinski and Nitin Saxena. <i>Schemes for Deterministic Polynomial Factoring</i>
	14:25		
14:25		Stef Graillat and Philippe Trebuchet. <i>A new algorithm for computing certified numerical approximations of the roots of a zero-dimensional system</i>	Frederic Bihan, J. Maurice Rojas and Casey E. Stella. <i>Faster Real Feasibility via Circuit Discriminants</i>
	14:50		
14:50		Changbo Chen, Marc Moreno Maza, Bican Xia and Lu Yang. <i>Computing Cylindrical Algebraic Decomposition via Triangular Decompositions</i>	Laureano Gonzalez-Vega, Irene Polo-Blanco, Jon Gonzalez-Sanchez, Ignacio F. Rua, Alejandro Pinera and Jorge Caravantes. <i>Analyzing Group based Matrix Multiplication Algorithms</i>
	15:15		
15:15		Xavier Dahan. <i>Size of coefficients of lexicographical Groebner bases</i>	
	15:40		
15:40	16:10	CLOSING CEREMONY, Main Auditorium	

Accepted Posters

Shutaro Inoue and Yosuke Sato.

Implementation of Boolean Gröbner Bases in Risa/Asir

Nikta Shayanfar and Mahmoud Hadizadeh.

Computer algebraic efficiency of matrix polynomials for system of integral equations

Hiroki Nakayama and Hiroshi Sekigawa.

Determining divisibility between polynomials with inexact coefficients

Kiyoshi Shirayanagi and Hiroshi Sekigawa.

A New Method of Reducing Exact Computations to Obtain Exact Results

Cristina Bertone, Guillaume Chèze and André Galligo.

Probabilistic Algorithms for Polynomial Absolute Factorization

Javier Esparza, Stefan Kiefer and Andreas Gaiser.

On least fixed points of systems of positive polynomials

Howard Cheng and George Labahn.

Applying Linear Algebra Routines to Modular Ore Polynomial Matrix Algorithms

Tateaki Sasaki and Yasutaka Ookura.

Approximate Factorization of Univariate Polynomials over Z

Eduardo Saenz-de-Cabezón and Henry P. Wynn.

Efficient algorithms for the algebraic analysis of system reliability

Alin Bostan, Shaoshi Chen, Frederic Chyzak and Ziming Li.

Rational-Functions Telescopers: Blending Creative Telescoping with Hermite Reduction

Hiroshi Murakami.

A continued fraction type method to find a rational number in a given closed interval whose denominator is minimal

Claude-Pierre Jeannerod, Christophe Moulleron and Gilles Villard.

Extending Cardinal's algorithm to a broader class of structured matrices

Annie Cuyt and Wen-shin Lee.

Symbolic-Numeric Sparse Interpolation of Multivariate Rational Functions

Akira Suzuki.

Computing Groebner Bases within Linear Algebra and Its Implementation

Bjarke Hammersholt Røune.

A Slice Algorithm for Koszul Simplicial Complexes on the Lcm Lattice of Monomial Ideals

Moshe Porat.

A Vector-Quantization Approach to Coding Systems

Xie Yuzhen and Marc Moreno Maza.

Balanced Dense Polynomial Multiplication on Multi-cores

Software Exhibits

Stéphane Despreaux and Aude Maignan.

A short tutorial for Dynsys: A program for dynamical systems based on dynamic graphs

Fadoua Ghourabi, Tetsuo Ida and Hidekazu Takahashi.

Reasoning Tool for Mathematical Origami Construction

Shutaro Inoue and Yosuke Sato.

BGSet - a software to compute boolean Gröbner bases

Hidenao Iwane, Hitoshi Yanami and Hirokazu Anai.

A parameter optimization toolbox SyNRAC and its industry-specific applications

Viktor Levandovskyy.

D-Modules with Singular

Françoise Richard-Jung.

The DESIR package