

Sessions

S1	Computer Algebra for Modeling in Science and Engineering
S2	Computer Algebra in Education
S3	Human-Computer Algebra Interaction
S4	Applied and Computational Algebraic Topology
S5	Difference Computer Algebra and its Applications
S6	Computer Algebra for Dynamical Systems and Celestial Mechanics
S7	Information Services for Mathematical Software, Models, and Research Data
S8	Algebraic and Algorithmic Aspects of Differential and Integral Operator Session
S9	Automated Theorem Proving in Dynamic Geometry: Current Achievements
S10	Computer Algebra in Coding Theory and Cryptography
S11	SC-Square: Symbolic Computation and Satisfiability Checking
S12	General Session

Monday

Monday Part 1

	Room 1409	Room 1403	Room 2404	Room 1245
09:00 – 09:30	Registration			
09:30 – 10:00				
10:00 – 10:30	Opening			
10:30 – 11:00		S5 C. Fürst and G. Landsmann: Bases for Modules of Difference-Operators by Gröbner Reduction	S9 P. Quaresma: Intelligent Geometry + Dynamic Geometry	
11:00 – 11:30		S5 V.P. Gerdt, Yu.A. Blinkov and K.B. Marinov: Difference algebra aided discretization of quasilinear evolution equations	S9 A. Wassermann: sketchometry: a sketching tool for geometry	
11:30 – 12:00		S5 A. Levin: Difference Dimension Quasi-polynomials	S9 E. Roanes-Lozano: A constructive approach to the quadrics of revolution and their equations using the DGS GeoGebra	
12:00 – 12:30		S5 C.M. Yuan: Binomial partial difference ideals	S9 Th. Dana-Picard and N. Zehavi: Managing the constraints of technology for an automated study of envelopes	
12:30 – 13:00			S9 Round table discussion	
13:00 – 13:30	Lunch Break			
13:30 – 14:00				

Monday Part 2

	Room 1409	Room 1403	Room 2404	Room 1245
14:00 – 14:30	Plenary Talk 1 Room 1409			
14:30 – 15:00	D. Jeffrey: Computer Algebra Systems and the Lambert W Function			
15:00 – 15:30	Break			
15:30 – 16:00	S8 W. M. Seiler: Algebraic Theory of Linear Partial Differential Algebraic Equations	S10 Y. Peretz: On multivariable asymmetric public-key cryptography based on simultaneous algebraic Riccati equations over finite fields	S9 B. Parisse: About Giac's Gröbner basis and ideal elimination computation	S7 W. Sperber: Information services for mathematical research data
16:00 – 16:30	S8 M. A. Barkatou and M. Jaroschek: Desingularization of First Order Linear Difference Systems with Rational Function Coefficients	S10 I. Márquez-Corbella and R. Pellikaan: Is it hard to retrieve an error-correcting pair?	S9 J. Davenport: What does 'without loss of generality' mean?	S7 H. Chrapary and W. Neun: The swMATH service for mathematical software - state of the art and perspectives
16:30 – 17:00	S8 G. Grasegger, N.T. Vo and F. Winkler: Deciding Rational Solvability of First-Order Algebraic Ordinary Differential Equations	S10 P. Utomo and R. Makarim: Solving the Binary Puzzle	S9 T. Sturm: Towards higher-degree quantifier elimination by virtual substitution	S7 H.-G. Gräbe: The <i>SymbolicData</i> Project -- a Community Driven Project for the CA Community
17:00 – 17:30	S8 A. Levin: Difference-Differential Dimension Polynomials and their Invariants	S10 S. T. Dougherty, J. Rifà and M. Villanueva: Generalized hadamard Additive Codes	S9 Round table discussion	S7 A. Heinle: Benchmarks for and Quality Evaluation of CAS
17:30 – 18:00	S8 D. Robertz: Thomas Decomposition and Nonlinear Control Systems	S10 A. Fotue Tabue, E. Martínez-Moro and C. Mouaha: Galois Theory for Linear Codes		S7 Round table discussion
18:00 – 18:30	S8 G. H. E. Duchamp, H. N. Minh and N. Q. Hoan: Polylogarithms at the multi-indices of non-positive integers	S10 I. Márquez-Corbella and E. Martínez-Moro: Betti Numbers and Generalized Hamming Weights		
18:30 – 19:00	Poster			

Tuesday

Tuesday Part 1

	Room 1409	Room 1403	Room 2404	Room 1245
09:00 – 09:30	<p style="text-align: center;">Plenary Talk 2 Room 1409</p> <p style="text-align: center;">T. Sturm: Real Problems over the Reals: From Complete Elimination Procedures to Subtropical Decisions</p>			
09:30 – 10:00				
10:00 – 10:30	Break			
10:30 – 11:00	S8 J. H. Poor, C. G. Raab and G. Regensburger: Tensor reduction systems for operator algebras and normal forms	S1 H. Sarafian: App. of Computer Algebra System and the Mean-Value Theory for Evaluating Electrostatic Potential and its Associated Field for Nontrivial Configurations	S2 E. Varbanova and M. Durcheva: Developing Competences in Higher Mathematics in a CAS Supported Learning Environment	
11:00 – 11:30	S8 C. G. Raab and G. Regensburger: Generalized integro-differential algebra from an operator point of view	S1 A. Bilek, M. Beldi, T. Cherfi, S. Djebali and S. Larbi: Experimental and Finite Elements Stress Analysis of a Double Edge Notched Specimen	S2 J. Weitendorf: Improving mathematical competences by using modern technology	
11:30 – 12:00	S8 V. V. Bavula: Classical left regular left quotient ring of a ring and its semisimplicity criteria	S1 S. Zouaoui, H. Djebouri, A. Bilek and K. Mohammedi: Modelling and Simulation of Solid Particle Sedimentation in an Incompressible Newtonian Fluid	S2 M. Durcheva and E. Varbanova: Applications of CAS in the Teaching and Learning of Discrete Mathematics	
12:00 – 12:30	S8 V. Levandovskyy: Computer Algebraic Analysis: Achievements, Perspectives and Directions (first part)	S1 S. Takato, J. A. Vallejo and M. Kaneko: Interfacing KetCindy and CASs, and its Applications to Scientific Problems Modeling	S2 R. Oldenburg: A Transparent Rule Based CAS to support Formalization of Knowledge	
12:30 – 13:00	S8 C. Schilli and V. Levandovskyy: The purity filtration of modules over Auslander regular rings	S1 T. Mylläri, A. Mylläri, A. Anckar and G. Högnäs: On the Visualization of Random Fibonacci-Padovan Sequences	S2 H.-D. Janetzko: The GUI CATO -- how natural usage of CAS with CATO modified the mathematical lectures and the interface itself	
13:00 – 13:30	Lunch Break			
13:30 – 14:00				

Tuesday Part 2

	Room 1409	Room 1403	Room 2404	Room 1245
14:00 – 14:30	Sponsor Talk 1 Room 1409			
14:30 – 15:00	S. Szurmant: What's New in Mathematica?			
15:00 – 15:30	Break			
15:30 – 16:00	S6 H. Errami, V. Gerdt, D. Grigoriev, M. Kosta, O. Radulescu, T. Sturm and A. Weber: A Case Study on the Parametric Occurrence of Multiple Steady States	S3 C. Bright, V. Ganesh, A. Heinle, I. Kotsireas, S. Nejati and K. Czarnecki: <i>MathCheck2</i> : Combining SAT and CAS	S2 S. Takato, A. McAndrew and M. Kaneko: Collaborative Use of KeTCindy and Free CASs for Making Materials	
16:00 – 16:30	S6 C. Chiralt, A. Ferragut, A. Gasull and P. Vindel: Quantitative analysis of competition models	S3 J. van der Hoeven and F. Poulain: Conservative conversion between LATEX and TEXMACS	S2 W. Wojas and J. Krupa: Visualization of simplex method with Mathematica	
16:30 – 17:00	S6 N. Vasilyev and V. Duzhin: Greedy trajectories of Plancherel processes on two dimensional Young and Schur graphs	S3 A. Kohlhasse: Math Web Search Interfaces and the Generation Gap of Mathematicians	S2 Z. Kovács: Real-time animated dynamic geometry in the classrooms by using fast Gröbner basis computations	
17:00 – 17:30	S6 A. Mylläri, V. Orlov, A. Chernin and T. Mylläri: Symbolic Dynamics, Mixing and Entropy in the Three-Body Problem	S3 M. Minimair: Collaborative Computer Algebra Shell	S2 W. Wojas and J. Krupa: Familiarizing students with definition of Lebesgue integral - examples of calculation directly from its definition using Mathematica	
17:30 – 18:00	S6 Y. Tang: Global dynamics of Planar Quintic Quasi--homogeneous Polynomial Differential Systems	S3 M. Kohlhasse: FramelT: Serious Math Games from Modular Math Ontologies	S2 Th. Dana-Picard and D. Zeitoun: A framework for an ICT-based study of parametric integrals	
18:00 – 18:30		ACA Business Meeting		
18:30 – 19:00				

Wednesday

Wednesday Part 1

	Room 1409	Room 1403	Room 2404	Room 1245
09:00 – 09:30	S6 J.C. Artes, P. De Maesschalck, F. Dumortier, C. Herssens and J. Llibre: P4 and desingularization of vector fields in the plane	S4 M. Fetzer: Computing Betti numbers of Veronese subrings with Pommaret bases	S5 P. Amodio, Yu.A. Blinkov, V.P. Gerdt and R. La Scala: Gröbner basis driven construction of a new s-consistent difference approximation to Navier-Stokes equations	
09:30 – 10:00	S6 N. Kruff: Local invariant sets of analytic vector fields	S4 C. Alemán, F. Cappelli and P. Real: Some computational elements of fractal topology based on HSF structures	S5 E. Amzallag and R. Gustavson: Order Bounds for a Difference Decomposition Algorithm	
10:00 – 10:30	S6 C. Schilli, E. Zerz and V. Levandovskyy: Invariant varieties for rational control systems	S4 A. Romero, J. Rubio and F. Sergeraert: An implementation of effective homotopy of fibrations	S5 D. Robertz: Maple packages for the analysis of linear systems of partial difference equations and applications	
10:30 – 11:00	S6 J. Llibre, C. Pantazi and S. Walcher: Elementary and Darboux first integrals for planar polynomial vector fields	S4 J. González, B. Gutiérrez and S. Yuzvinsky: Motion planning of robot arms with combinatorial restrictions	S5 A.A. Kytmanov and A.P. Lyapin: On Computing Rational Generating Function of a Solution to the Cauchy Problem of Difference Equation	
11:00 – 11:30	S6 J. Torregrosa: Limit cycles in planar polynomial systems	S4 F. Díaz del Río, D. Onchis and P. Real: Computing a new topological feature for grey-level 2D digital images: the topological hole tree	S5 M. Wibmer: Computing difference algebraic relations among solutions of linear differential equations	
11:30 – 12:00	Lunch Break			
12:00 – 12:30				
12:30 – 13:00				

Wednesday Part 2

13:00 – 13:30	Conference Excursion
13:30 – 14:00	
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18:30 – 19:00	Conference Dinner
19:00 –	

Thursday

Thursday Part 1

	Room 1409	Room 1403	Room 2404	Room 1245
09:00 – 09:30	Plenary Talk 3 Room 1409 P. Real: Exploring a Homotopy Approach to the Science of Data: Huge Scenarios, Topological Scintigraphy and Flagellate Structures			
09:30 – 10:00				
10:00 – 10:30	S8 E. Farrington and E. Previato: Symbolic Computation for Rankin-Cohen Differential Algebras. Klein curve as a case study.	Break		
10:30 – 11:00	S8 A. Heinle and V. Levandovskyy: Computation of all Factorizations in Certain Non-Commutative Rings	S11 E. Abraham, J. Abbott, B. Becker, A. M. Bigatti, M. Brain, B. Buchberger, A. Cimatti, J. H. Davenport, M. England, P. Fontaine, S. Forrest, A. Griggio, D. Kroening, W. M. Seiler and T. Sturm: SC ² : Satisfiability Checking meets Symbolic Computation	S1 R. Kragler: Symbolic Contour Integration in Mathematica (Part 2): Some Special Topics to be Investigated	S12 M. Albert: Computation of Hilbert Schemes
11:00 – 11:30	S8 J. Hoffmann and V. Levandovskyy: Ore localization, associated torsion and algorithms	S11 M. Brain: Satisfiability Modulo Theories: Where We Are, How We Got Here, and Where We Could Go Next	S1 A. Prokopenya: Motion of a Swinging Atwood's Machine: Simulation and Analysis	S12 A. Hashemi: Noether Normalization and Involutive Bases
11:30 – 12:00	S8 J. Nüßle: Local Closure of Ore Algebras	S11 S. Forrest: Integration of a SAT Solver into Maple	S1 T. Telksnys, Z. Navickas and M. Ragulskis: Construction of Analytical Solutions to Nonlinear Evolution Equations Using the Generalized Differential Operator Method	S12 D.D. Tcheutia: Divided-difference equation and three-term recurrence relations of some systems of bivariate q-orthogonal polynomials
12:00 – 12:30	S8 N. Kruff and V. Levandovskyy: Ore localization with applications in D-module theory	S11 J. Abbott, A. M. Bigatti and L. Robbiano: Implicitization with Gröbner Bases: the well known algorithm and algorithms which work	S1 A. Siluszyk: On Degenerate Central Configurations in the N-Body Problem	S12 D.D. Tcheutia, Y. Guemo Teffo, M. Foupouagnigni, E. Godoy and I. Area: Linear partial divided-difference equation satisfied by multivariate orthogonal polynomials on quadratic lattices
12:30 – 13:00	S8 V. Levandovskyy: Computer Algebraic Analysis: Achievements, Perspectives and Directions (second part)	S1 M.Zh. Minglibayev, A.N. Prokopenya, G.M. Mayemerova and Zh.U. Imanova: Secular Perturbations in the Two-Planetary Three-Body Problem with the Masses Varying Anisotropically with Different Rates	S12 M. Gerling: Efficient computation of the bivariate chromatic polynomial for special graphs	

Thursday Part 2

	Room 1409	Room 1403	Room 2404	Room 1245
13:00 – 13:30	Lunch Break			
13:30 – 14:00				
14:00 – 14:30	Sponsor Talk 2 Room 1409 J. Gerhard: What's New in Maple 2016?			
14:30 – 15:00				
15:00 – 15:30	Break			
15:30 – 16:00	S6 C.J. Christopher and W.M.A. Hussein: A Geometric Approach for Invariant Algebraic Curves in 2D Lotka Volterra Systems I	S11 J. Abbott: Symbolic Computation: give and take for SC2		
16:00 – 16:30	S6 C.J. Christopher and W.M.A. Hussein: A Geometric Approach for Invariant Algebraic Curves in 2D Lotka Volterra Systems II	S11 Round table discussion		
16:30 – 17:00	S6 W.M. Seiler: A Dynamical Systems Approach to Singularities of Ordinary Differential Equations			
17:00 – 17:30	S6 M. Seiß: Singular Initial Value Problems for Quasi-Linear Ordinary Differential Equations			
17:30 – 18:00				
18:00 – 18:30				
18:30 – 19:00				