

1. Record Nr.	UNINA9910299982603321
Titolo	Computer Mathematics : 9th Asian Symposium (ASCM2009), Fukuoka, December 2009, 10th Asian Symposium (ASCM2012), Beijing, October 2012, Contributed Papers and Invited Talks // edited by Ruyong Feng, Wen-shin Lee, Yosuke Sato
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014
ISBN	3-662-43799-6
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (498 p.)
Disciplina	004.0151
Soggetti	Computer mathematics Computer software Computational Mathematics and Numerical Analysis Computational Science and Engineering Mathematical Software
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Sparse Polynomial Interpolation by Variable Shift in the Presence of Noise and Outliers in the Evaluations -- An Incremental Algorithm for Computing Cylindrical Algebraic Decompositions -- Finding the Symbolic Solution of a Geometric Problem through Numeric Computations -- A Simple Quantifier-free Formula of Positive Semidefinite Cyclic Ternary Quartic Forms -- The vanishing ideal of a finite set of points with multiplicity structures -- Signature-based Method of Deciding Program Termination -- High-precision eigenvalue bound for the Laplacian with singularities -- Degree and dimension estimates for invariant ideals of P-solvable recurrences -- POLY : A new polynomial data structure for Maple 17 -- A Symbolic Approach to Compute a Null-Space Basis in the Projection Method -- Real Root Isolation of Polynomial Equations Based on Hybrid Computation -- Overview of the Mathmagix type system -- Resultant-Free Computation of Indefinite Hyperexponential Integrals -- ImUp: A Maple Package for Uniformity-Improved Reparameterization of Plane Curves -- The Diagonal Reduction Algorithm Using Fast Givens --

Constructing Generalized Bent Functions from Trace Forms over Galois Rings -- Matrix Formula of Differential Resultant for First Order Generic Ordinary Differential Polynomials -- Simplification of the lattice based attack of Boneh and Durfee for RSA cryptanalysis -- A Practical Implementation of a Modular Algorithm for Ore Polynomial Matrices -- Computing Popov Forms of Matrices over PBW Extensions -- On the simplest quartic fields and related Thue equations -- On the Implementation of Boolean Gröbner Bases -- Towards the calculation of Casimir forces for inhomogeneous planar media -- Comprehensive Gröbner Bases in a Java Computer Algebra System -- A Symbolic Approach to Compute a Null-Space Basis in the Projection Method -- Real Root Isolation of Regular Chains -- A Practical Method for Floating-point Groebner Basis Computation -- Series-Expansion of Multivariate Algebraic Functions at Singular Points: Nonmonic Case -- A Sequence of Nearest Polynomials with Given Factors -- Digitisation Workflow in the Czech Digital Mathematics Library -- The Implementation and Complexity Analysis of the Branch Gröbner Bases Algorithm over Boolean Ring.

---

Sommario/riassunto

This book covers original research and the latest advances in symbolic, algebraic and geometric computation; computational methods for differential and difference equations, symbolic-numerical computation; mathematics software design and implementation; and scientific and engineering applications based on features, invited talks, special sessions and contributed papers presented at the 9th (in Fukuoka, Japan in 2009) and 10th (in Beijing China in 2012) Asian Symposium on Computer Mathematics (ASCM). Thirty selected and refereed articles in the book present the conference participants' ideas and views on researching mathematics using computers.

---