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Collana	Theoretical Computer Science and General Issues, , 2512-2029 ; ; 8660
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Soggetti	Algorithms Computer science—Mathematics Discrete mathematics Computer graphics Numerical analysis Computer arithmetic and logic units Discrete Mathematics in Computer Science Symbolic and Algebraic Manipulation Computer Graphics Numerical Analysis Arithmetic and Logic Structures
Lingua di pubblicazione	Inglese
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Note generali	Includes index.
Nota di contenuto	Relation Algebra, RelView, and Plurality Voting -- An Algorithm for Converting Nonlinear Differential Equations to Integral Equations with an Application to Parameter Estimation from Noisy Data -- Truth Table Invariant Cylindrical Algebraic Decomposition by Regular Chains -- Computing the Topology of an Arrangement of Implicit and Parametric Curves Given by Values -- Finding a Deterministic Generic Position for an Algebraic Space Curve -- Computer Algebra Experimentation -- On the Parallelization of Subproduct Tree Techniques Targeting -- Many-core Architectures -- Deterministically Computing Reduction Numbers of Polynomial Ideals.

Sommario/riassunto

This book constitutes the proceedings of the 16th International Workshop on Computer Algebra in Scientific Computing, CASC 2014, held in Warsaw, Poland, in September 2014. The 33 full papers presented were carefully reviewed and selected for inclusion in this book. The papers address issues such as Studies in polynomial algebra are represented by contributions devoted to factoring sparse bivariate polynomials using the priority queue, the construction of irreducible polynomials by using the Newton index, real polynomial root finding by means of matrix and polynomial iterations, application of the eigenvalue method with symmetry for solving polynomial systems arising in the vibration analysis of mechanical structures with symmetry properties, application of Gröbner systems for computing the (absolute) reduction number of polynomial ideals, the application of cylindrical algebraic decomposition for solving the quantifier elimination problems, certification of approximate roots of overdetermined and singular polynomial systems via the recovery of an exact rational univariate representation from approximate numerical data, new parallel algorithms for operations on univariate polynomials (multi-point evaluation, interpolation) based on subproduct tree techniques.