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Nota di contenuto	-- A Failure Probability Analysis of a Modular Algorithm to Compute the Monic GCD of Multivariate Polynomials over Algebraic Number Fields Q. -- Second-Order Parameterizations for the Complexity Theory of Integrable Functions. -- Ordered Fields and Grzegorzczyk's Hierarchy. -- Computation of Stirling Numbers for Complex Arguments. -- High Performance Gröbner Basis Computations in Free Algebras. -- Projective Plane Subdivision Method For Initial Orbit Determination. -- On Stationary Motions in the Generalized Problem of the Chaplygin Ball. -- Effective Hilbert's Irreducibility Theorem for Primary Ideals. -- Advanced Symbolic Integration of Products of the Fox H-Functions. -- Computing Linear Regions in Neural Networks with Skip Connections. -- A Hybrid Approach to Speeding up Schoof's Algorithm on Supersingular Elliptic Curves. -- Symbolic-Numerical

Algorithms for Solving Multidimensional Boundary Value Problems by Finite Element Method on Hypercubes. -- A New Black Box GCD Algorithm using Hensel Lifting. -- Lower Bounds of Costs of 3-isogenies Formulas in the Framework of Generalized Montgomery Coordinates. -- Support Bound for Differential Elimination in Polynomial Dynamical Systems. -- Software Portability for Computer Algebra. -- An Effective Trajectory Planning and an Optimized Path Planning for a 6-Degree-of-Freedom Robot Manipulator. -- Inverse Kinematics for a 6-Degree-of-Freedom Robot Manipulator Using Comprehensive Gröbner Systems. -- Choosing Variable Orderings Based on Elimination Tree for Sparse Triangular Decomposition. -- Parallel Computation of the Power Series Solutions to Linear Ordinary Differential Equation. -- Subresultant of Bernstein Polynomials and its Application in Computing the Parametric Greatest Common Divisor. -- Hankel Polynomials and Their Zeros.

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Sommario/riassunto

This book constitutes the refereed proceedings of the 27th International Workshop on Computer Algebra in Scientific Computing, CASC 2025, which took place in Dubai, United Arab Emirates, during November 24–28, 2025. The 22 full papers included in this book were carefully reviewed and selected from 36 submissions. They focus on all aspects of computer algebra, symbolic computation, scientific computing, and related fields, alongside the country's strategic focus on advancing research and establishing itself as a regional hub and global leader in scientific computing.

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