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Note generali	"... the Eighth Asian Symposium on Computer Mathematics (ASCM 2007)"--Pref.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Algorithms and Implementations -- Computing the Minkowski Value of the Exponential Function over a Complex Disk -- Unconstrained Parametric Minimization of a Polynomial: Approximate and Exact -- The Nearest Real Polynomial with a Real Multiple Zero in a Given Real Interval -- Practical and Theoretical Issues for the Computation of Generalized Critical Values of a Polynomial Mapping -- Which Symmetric Homogeneous Polynomials Can Be Proved Positive Semidefinite by Difference Substitution Method? -- Basis-Independent Polynomial Division Algorithm Applied to Division in Lagrange and Bernstein Basis -- Computing the Greatest Common Divisor of Polynomials Using the Comrade Matrix -- Efficient Algorithms for Computing Noether Normalization -- Stability of GPBiCG_AR Method Based on Minimization of Associate Residual -- Evaluation of a Java Computer Algebra System -- A New Property of Hamming Graphs and Mesh of d-ary Trees -- Numerical Methods and Applications -- An Interpolation Method That Minimizes an Energy Integral of Fractional Order -- Solving Biomechanical Model Using Third-Order Runge-Kutta Methods -- An Efficient Fourth Order Implicit Runge-Kutta Algorithm for Second Order Systems -- Laplace Equation Inside a Cylinder: Computational Analysis and Asymptotic Behavior of the Solution -- A Method and Its Implementation for Constructing Bäcklund

Transformations to Nonlinear Evolution Equations -- On the Invariant Properties of Hyperbolic Bivariate Third-Order Linear Partial Differential Operators -- Symbolic Solution to Magnetohydrodynamic Hiemenz Flow in Porous Media -- Local Similarity Solutions for Laminar Boundary Layer Flow along a Moving Cylinder in a Parallel Stream -- Elimination: Triangular Forms, Resultants, Equation Solving -- An Algorithm for Transforming Regular Chain into Normal Chain -- A Modified Van der Waerden Algorithm to Decompose Algebraic Varieties and Zero-Dimensional Radical Ideals -- Regular Decompositions -- Floating-Point Gröbner Basis Computation with Ill-conditionedness Estimation -- The Maximality of the Dixon Matrix on Corner-Cut Monomial Supports -- Properties of Ascending Chains for Partial Difference Polynomial Systems -- Cryptology -- Some Mathematical Problems in Cryptanalysis -- A Reduction Attack on Algebraic Surface Public-Key Cryptosystems -- Computational Logic -- The Four Colour Theorem: Engineering of a Formal Proof -- On the Computation of Elimination Ideals of Boolean Polynomial Rings -- Computer Search for Large Sets of Idempotent Quasigroups.

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**Sommario/riassunto**

This book constitutes thoroughly refereed post-conference proceedings of the 8th Asian Symposium on Computer Mathematics, ASCM 2007, held in Singapore in December 2007. The 22 revised full papers and 5 revised poster papers presented together with 3 invited lectures were carefully selected during two rounds of reviewing and improvement from 65 submissions. The papers are organized in topical sections on algorithms and implementations, numerical methods and applications, cryptology, and computational logic.

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