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Nota di contenuto	Analytic Solutions of Linear Difference Equations, Formal Series, and Bottom Summation -- Computations in Modules over Commutative Domains -- Advances on the Continued Fractions Method Using Better Estimations of Positive Root Bounds -- An Efficient LLL Gram Using Buffered Transformations -- On the Computation of A ???-Maps -- Algebraic Visualization of Relations Using RelView -- Comprehensive Triangular Decomposition -- Stability Investigation of a Difference Scheme for Incompressible Navier-Stokes Equations -- A Symbolic-Numerical Algorithm for Solving the Eigenvalue Problem for a Hydrogen Atom in the Magnetic Field: Cylindrical Coordinates -- An Algorithm for Construction of Normal Forms -- Computer Algebra: A 'Classical' Path to Explore Decoherence and Entanglement Phenomena in Quantum Information Theory -- Deducing the Constraints in the Light-Cone SU (3) Yang-Mills Mechanics Via Gröbner Bases -- On the Weight Spectra

of Conway Matrices Related to the Non-transitive Head-or-Tail Game
 -- Properties of the Liapunov Stability Zones of the Lagrange Triangle
 -- Studying the Stability of the Second Order Non-autonomous
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 Invariant Manifolds of Conservative Systems -- A Unified Algorithm for
 Multivariate Analytic Factorization -- On the Computation of the
 Defining Polynomial of the Algebraic Riccati Equation -- Symmetries
 and Dynamics of Discrete Systems -- Exact Solutions of Completely
 Integrable Systems and Linear ODE's Having Elliptic Function
 Coefficients -- Dynamics of Nonlinear Parabolic Equations with
 Cosymmetry -- Weak Integer Quantifier Elimination Beyond the Linear
 Case -- Polynomial Division Using Dynamic Arrays, Heaps, and Packed
 Exponent Vectors -- Ruppert Matrix as Subresultant Mapping --
 Construction of Computer System for Microobjects Recognition Based
 on Neural Networks -- Analytical Solution for Transient Flow of a
 Generalized Bingham Fluid with Memory in a Movable Tube Using
 Computer Algebra -- Some Elimination Problems for Matrices -- A Full
 System of Invariants for Third-Order Linear Partial Differential
 Operators in General Form -- Automatic Stability Analysis for a
 Diffusion Equation with Memories Using Maple -- Bounds for Real
 Roots and Applications to Orthogonal Polynomials -- Distance
 Computation from an Ellipsoid to a Linear or a Quadric Surface in \mathbb{R}^n
 -- Robust Stability for Parametric Linear ODEs -- Symbolic and
 Algebraic Methods for Linear Partial Differential Operators -- A New
 Scheme for Deniable/Repudiable Authentication -- An Algebraic-
 Numeric Algorithm for the Model Selection in Kinetic Networks -- On
 the Representation of the Differential Operator in Bases of Periodic
 Coiflets and It's Application.

Sommario/riassunto

This book constitutes the refereed proceedings of the 10th
 International Workshop on Computer Algebra in Scientific Computing,
 CASC 2007, held in Bonn, Germany, in September 2007. The volume is
 dedicated to Professor Vladimir P. Gerdt on the occasion of his 60th
 birthday. The papers cover not only various expanding applications of
 computer algebra to scientific computing but also the computer
 algebra systems themselves and the CA algorithms.
