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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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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
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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
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-- 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.
