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Nota di contenuto	On m-Interlacing Solutions of Linear Difference Equations -- Parametric Analysis of Stability Conditions for a Satellite with Gyrodines -- Computing and Visualizing Closure Objects Using Relation Algebra and RelView -- On Integrability of a Planar ODE System Near a Degenerate Stationary Point -- Conditions of D-Stability of the Fifth-Order Matrices -- Code Generation for Polynomial Multiplication -- Solving Structured Polynomial Systems and Applications to Cryptology -- The Comparison Method of Physical Quantity Dimensionalities --

Ambient Isotopic Meshing for Implicit Algebraic Surfaces with Singularities -- Involution and Difference Schemes for the Navier–Stokes Equations -- A Mathematica Package for Simulation of Quantum Computation -- On Computing the Hermite Form of a Matrix of Differential Polynomials -- On the Computation of Comprehensive Boolean Gröbner Bases -- On Invariant Manifolds of Dynamical Systems in Lie Algebras -- On the Complexity of Reliable Root Approximation -- Algebraic Approach to the Computation of the Defining Polynomial of the Algebraic Riccati Equation -- Discrete Dynamics: Gauge Invariance and Quantization -- Effective Quantifier Elimination for Presburger Arithmetic with Infinity -- An Algorithm for Symbolic Solving of Differential Equations and Estimation of Accuracy -- Lazy and Forgetful Polynomial Arithmetic and Applications -- On the Average Growth Rate of Random Compositions of Fibonacci and Padovan Recurrences -- A Study on Gröbner Basis with Inexact Input -- Modular Algorithms for Computing a Generating Set of the Syzygy Module -- A Symbolic Framework for Operations on Linear Boundary Problems -- Mathematical Model for Dengue Epidemics with Differential Susceptibility and Asymptomatic Patients Using Computer Algebra -- Multiple Factorizations of Bivariate Linear Partial Differential Operators -- Computing Gröbner Bases within Linear Algebra -- A Mimetic Finite-Difference Scheme for Convection of Multicomponent Fluid in a Porous Medium -- Symbolic-Numerical Algorithms for Solving Parabolic Quantum Well Problem with Hydrogen-Like Impurity -- New Analytic Solutions of the Problem of Gas Flow in a Casing with Rotating Disc -- Hybrid Solution of Two-Point Linear Boundary Value Problems.

Sommario/riassunto	This book constitutes the refereed proceedings of the 11th International Workshop on Computer Algebra in Scientific Computing, CASC 2009, held in Kobe, Japan, in September 2009. The 28 revised full papers presented together with 2 invited lectures were carefully reviewed and selected from numerous submissions. The topics addressed are all basic areas of scientific computing as they benefit from the application of computer algebra methods and software. The papers cover computer algebra methods and algorithms, application of symbolic and algebraic manipulation, and CA methods and results for the numerical integration of the partial differential equations of the mathematical physics.