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Operations over Algebraic Extension Fields -- Range Functions of Any Convergence Order and their Amortized Complexity Analysis -- Stability and Zero-Hopf Bifurcation Analysis of the Lorenz–Stenflo System Using Symbolic Methods -- Non-Principal Branches of Lambert W. A Tale of 2 circles -- On the Qualitative Analysis of the Equations of Motion of a Nonholonomic Mechanical System -- Solving Parametric Linear Systems Using Sparse Rational Function Interpolation -- On the Distance to the Nearest Defective Matrix -- Effective Algorithm for Computing Noetherian Operators of Positive Dimensional Ideals -- On the Structure and Generators of Differential Invariant Algebras -- An Algorithm for the Intersection Problem of Planar Parametric Curves -- A Symbolic-numeric Method for Solving the Poisson Equation in Polar Coordinates -- Two Variants of B´ezout Subresultants for Several Univariate Polynomials -- Efficient Quotients of Non-Commutative Polynomials -- Inverse Kinematics and Path Planning of Manipulator Using Real Quantifier Elimination Based on Comprehensive Gröbner Systems.

Sommario/riassunto

This book constitutes the refereed proceedings of the 25th International Workshop on Computer Algebra in Scientific Computing, CASC 2023, which took place in Havana, Cuba, during August 28-September 1, 2023. The 22 full papers included in this book were carefully reviewed and selected from 29 submissions. They focus on the theory of symbolic computation and its implementation in computer algebra systems as well as all other areas of scientific computing with regard to their benefit from or use of computer algebra methods and software. .