Computer algebra in scientific computing : 14th international workshop, CASC 2012, Maribor, Slovenia, September 3-6, 2012 : proceedings

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Abstrak

This book constitutes the proceedings of the 14th International Workshop on Computer Algebra in Scientific Computing, CASC 2012, held in Maribor, Slovenia, in September 2012. The 28 full papers presented were carefully reviewed and selected for inclusion in this book. One of the main themes of the CASC workshop series, namely polynomial algebra, is represented by contributions devoted to new algorithms for computing comprehensive Gröbner and involutive systems, parallelization of the Gröbner bases computation, the study of quasi-stable polynomial ideals, new algorithms to compute the Jacobson form of a matrix of Ore polynomials, a recursive Leverrier algorithm for inversion of dense matrices whose entries are monic polynomials, root isolation of zero-dimensional triangular polynomial systems, optimal computation of the third power of a long integer, investigation of the complexity of solving systems with few independent monomials, the study of ill-conditioned polynomial systems, a method for polynomial root-finding via eigen-solving and randomization, an algorithm for fast dense polynomial multiplication with Java using the new opaque typed method, and sparse polynomial powering using heaps.