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Titolo	Algebraic and Algorithmic Aspects of Differential and Integral Operators [[electronic resource]] : 5th International Meeting, AADIOS 2012, Held at the Applications of Computer Algebra Conference, ACA 2012, Sofia, Bulgaria, June 25-28, 2012, Selected and Invited Papers / / edited by Moulay Barkatou, Thomas Cluzeau, Georg Regensburger, Markus Rosenkranz
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Disciplina	515.35
Soggetti	Computer science Machine theory Computer science—Mathematics Discrete mathematics Algorithms Differential equations Computer Science Logic and Foundations of Programming Formal Languages and Automata Theory Discrete Mathematics in Computer Science Symbolic and Algebraic Manipulation Differential Equations
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Constructions of Free Commutative Integro-Differential Algebras -- Basic Module Theory over Non-commutative Rings with Computational Aspects of Operator Algebras -- Operational Calculi for Nonlocal Cauchy Problems in Resonance Cases -- Intertwining Laplace Transformations of Linear Partial Differential Equations -- Composing and Factoring Generalized Green's Operators and Ordinary Boundary Problems -- Relativistic Coulomb Integrals and Zeilberger's Holonomic Systems Approach II -- Multivariate Dimension Polynomials of Inversive

Difference Field Extensions -- Differential (Monoid) Algebra and More
-- Exact Solution of Local and Nonlocal BVPs for the Laplace Equation
in a Rectangle.

Sommario/riassunto

This book constitutes the proceedings of the 5th International Meeting on Algebraic and Algorithmic Aspects of Differential and Integral Operators, AADIOS 2012, held at the Applications of Computer Algebra Conference in Sofia, Bulgaria, on June 25-28, 2012. The total of 9 papers presented in this volume consists of 2 invited papers and 7 regular papers which were carefully reviewed and selected from 13 submissions. The topics of interest are: symbolic computation for operator algebras, factorization of differential/integral operators, linear boundary problems and green's operators, initial value problems for differential equations, symbolic integration and differential galois theory, symbolic operator calculi, algorithmic D-module theory, rota-baxter algebra, differential algebra, as well as discrete analogs and software aspects of the above.