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	Nota di contenuto	Introduction -- Chapter I: Basic Structural Tricks and Examples -- Chapter II: Gröbner Bases in Associative Algebras -- Chapter III: Gröbner Bases and Basic Algebraic-Algorithmic Structures -- Chapter IV: Filtered-Graded Transfer of Gröbner Bases -- Chapter V: GK-dimension of Modules over Quadric Solvable Polynomial Algebras and Elimination of Variables -- Chapter VI: Multiplicity Computation of Modules over Quadric Solvable Polynomial Algebras -- Chapter VII: (partial-)Holonomic Modules and Functions over Quadric Solvable Polynomial Algebras -- Chapter VII: Regularity and Ko-group of Quadric Solvable Polynomial Algebras -- References -- Index.
	Sommario/riassunto	This self-contained monograph is the first to feature the intersection of the structure theory of noncommutative associative algebras and the algorithmic aspect of Groebner basis theory. A double filtered-graded transfer of data in using noncommutative Groebner bases leads to effective exploitation of the solutions to several structural-computational problems, e.g., an algorithmic recognition of quadric solvable polynomial algebras, computation of GK-dimension and multiplicity for modules, and elimination of variables in noncommutative setting. All topics included deal with algebras of (q-) differential operators as well as some other operator algebras,

enveloping algebras of Lie algebras, typical quantum algebras, and many of their deformations.