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A Study of Rees Algebra by Grobner Bases; 7.1 Defining A by G*; 7.2 Defining A by G; 7.3 Recognizing Structural Properties of A via G; 7.4 An Application to Regular Central Extensions; 7.5 Algebras Defined by dh-Closed Homogeneous Grobner Bases; 8. Looking for More Grobner Bases
8.1 Lifting (Finite) Grobner Bases from On(ji)8.2 Lifting (Finite) Grobner Bases from a Class of Algebras; 8.3 New Examples of Grobner Basis Theory; 8.4 Skew 2-Nomial Algebras; 8.5 Almost Skew 2-Nomial Algebras; Bibliography; Index

Sommario/riassunto

This monograph strives to introduce a solid foundation on the usage of Grobner bases in ring theory by focusing on noncommutative associative algebras defined by relations over a field K. It also reveals the intrinsic structural properties of Grobner bases, presents a constructive PBW theory in a quite extensive context and, along the routes built via the PBW theory, the book demonstrates novel methods of using Grobner bases in determining and recognizing many more structural properties of algebras, such as the Gelfand-Kirillov dimension, Noetherianity, (semi-)primeness, PI-property, finitenes