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Nota di contenuto	Marian Aprodu: Lazarfeld-Mukai bundles and applications to syzygies -- Paul Aspinwall: Some Applications of Commutative Algebra to String Theory -- Angelica Benito, Eleonore Faber, and Karen Smith: Measuring singularities with Frobenius: the basics -- Christine Berkesch, Daniel Erman, and Manoj Kumini: Three avors of extremal Betti tables -- Manuel Blickle and Karl Schwede: p1 linear maps in algebra and geometry -- Markus Brodmann, Cao Luy Linh, and Maria-Helena Seiler: Castelnuovo-Mumford Regularity of Annihilators, Ext-Modules and Tor-Modules -- David Buchsbaum: Selections From the Letter-Place Panoply -- Aldo Conca, Emanuella DeNegri, and Maria-Evelina Rossi: Bounds for the Castelnuovo-Mumford regularity and Koszul algebras -- Marc Chardin: Powers of ideals: Betti numbers, cohomology and regularity -- Hailong Dao: Some homological properties of modules over a complete intersection, with applications -- Christopher Francisco, Huy Tai Ha, and Jeffrey Mermin: Powers of squarefree ideals and combinatorics -- Graham Evans and Phillip Griffith: A Brief History of Order Ideals -- Laurent Gruson, Steven Sam, and Jerzy Weyman: Moduli of Abelian varieties, Vinberg 0-groups, and free resolutions -- Melvin Hochster: F-purity, Frobenius splitting, and tight closure -- Craig Huneke: Hilbert-Kunz multiplicity and the F-signature -- Juan Migliore, Uwe Nagel, and Fabrizio Zanello : Pure O-sequences: known results, applications and open problems -- Jason McCullough and

Alexandra Seceleanu: Bounding projective dimension -- Graham Leuschke and Roger Wiegand: Brauer-Thrall theory for Maximal Cohen-Macaulay modules -- Paul Monsky: Tight closure's failure to localize -- a self-contained exposition -- Giorgio Ottaviani: Introduction to the hyperdeterminant and to the rank of multidimensional matrices -- Henry Schenck and Jessica Sidman: Commutative Algebra of Subspace and Hyperplane Arrangements -- Wolmer Vasconcelos: Cohomological Degrees and Applications.

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Sommario/riassunto

This contributed volume brings together the highest quality expository papers written by leaders and talented junior mathematicians in the field of Commutative Algebra. Contributions cover a very wide range of topics, including core areas in Commutative Algebra and also relations to Algebraic Geometry, Algebraic Combinatorics, Hyperplane Arrangements, Homological Algebra, and String Theory. The book aims to showcase the area, especially for the benefit of junior mathematicians and researchers who are new to the field; it will aid them in broadening their background and to gain a deeper understanding of the current research in this area. Exciting developments are surveyed and many open problems are discussed with the aspiration to inspire the readers and foster further research.

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