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# Commutative Algebra Mathematics

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## **MUHAMMAD DAPHNE**

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"Presents the proceedings  
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Details the latest  
developments in

commutative algebra and  
related areas-featured 26  
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and six survey articles on  
fundamental topics of  
current interest. Examines  
wide-ranging  
developments in  
commutative algebra,  
together with connections  
to algebraic number  
theory and algebraic  
geometry."

**Arithmetic of Blowup  
Algebras** CRC Press

This book highlights the  
contributions of the  
eminent mathematician  
and leading algebraist  
David F. Anderson in  
wide-ranging areas of  
commutative algebra. It  
provides a balance of  
topics for experts and  
non-experts, with a mix of  
survey papers to offer a  
synopsis of developments  
across a range of areas of  
commutative algebra and  
outlining Anderson's work.  
The book is divided into  
two sections—surveys and  
recent research  
developments—with each  
section presenting  
material from all the  
major areas in  
commutative algebra. The  
book is of interest to  
graduate students and  
experienced researchers

alike.

Commutative Algebra and Algebraic Geometry CRC Press

Commutative algebra, combinatorics, and algebraic geometry are thriving areas of mathematical research with a rich history of interaction. *Connections Between Algebra and Geometry* contains lecture notes, along with exercises and solutions, from the Workshop on *Connections Between Algebra and Geometry* held at the University of Regina from May 29-June 1, 2012. It also contains research and survey papers from academics invited to participate in the companion Special Session on *Interactions Between Algebraic Geometry and Commutative Algebra*, which was part of the CMS Summer Meeting at the University of Regina held June 2-3, 2012, and the meeting *Further Connections Between Algebra and Geometry*, which was held at the North Dakota State University February 23, 2013. This volume highlights three mini-courses in the areas of commutative algebra and algebraic geometry: differential graded commutative algebra,

secant varieties, and fat points and symbolic powers. It will serve as a useful resource for graduate students and researchers who wish to expand their knowledge of commutative algebra, algebraic geometry, combinatorics, and the intricacies of their intersection.

**Undergraduate Commutative Algebra** Springer

This textbook offers a thorough, modern introduction into commutative algebra. It is intended mainly to serve as a guide for a course of one or two semesters, or for self-study. The carefully selected subject matter concentrates on the concepts and results at the center of the field. The book maintains a constant view on the natural geometric context, enabling the reader to gain a deeper understanding of the material. Although it emphasizes theory, three chapters are devoted to computational aspects. Many illustrative examples and exercises enrich the text.

Advances in Commutative Algebra Cambridge University Press

This volume presents a multi-dimensional collection of articles

highlighting recent developments in commutative algebra. It also includes an extensive bibliography and lists a substantial number of open problems that point to future directions of research in the represented subfields. The contributions cover areas in commutative algebra that have flourished in the last few decades and are not yet well represented in book form. Highlighted topics and research methods include Noetherian and non-Noetherian ring theory as well as integer-valued polynomials and functions. Specific topics include: · Homological dimensions of Prüfer-like rings · Quasi complete rings · Total graphs of rings · Properties of prime ideals over various rings · Bases for integer-valued polynomials · Boolean subrings · The portable property of domains · Probabilistic topics in  $\text{Intn}(D)$  · Closure operations in Zariski-Riemann spaces of valuation domains · Stability of domains · Non-Noetherian grade · Homotopy in integer-valued polynomials · Localizations of global properties of rings · Topics in integral closure · Monoids and submonoids

of domains The book includes twenty articles written by many of the most prominent researchers in the field. Most contributions are authored by attendees of the conference in commutative algebra held at the Graz University of Technology in December 2012. There is also a small collection of invited articles authored by those who did not attend the conference. Following the model of the Graz conference, the volume contains a number of comprehensive survey articles along with related research articles featuring recent results that have not yet been published elsewhere.

Lecture notes in pure and applied mathematics

Springer Science & Business Media

First Published in 2018.

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**Gorenstein Dimensions**

Cambridge University Press

There is no shortage of books on Commutative Algebra, but the present book is different. Most books are monographs, with extensive coverage. There is one notable exception: Atiyah and Macdonald's 1969 classic. It is a clear, concise, and

efficient textbook, aimed at beginners, with a good selection of topics. So it has remained popular. However, its age and flaws do show. So there is need for an updated and improved version, which the present book aims to be.

*Integral Closure of Ideals, Rings, and Modules*

Springer

For those looking for an introduction to the area of commutative algebra, this book opens all the right doors and provides a clarity of understanding that all will welcome.

White Noise on Bialgebras

CRC Press

Stochastic processes with independent increments on a group are

generalized to the concept of "white noise" on a Hopf algebra or bialgebra. The main purpose of the book is the characterization of these processes as solutions of quantum stochastic differential equations in the sense of R.L.

Hudson and K.R.

Parthasarathy. The notes are a contribution to quantum probability but they are also related to classical probability, quantum groups, and operator algebras. The Azuma martingales appear as examples of white noise on a Hopf algebra which is

a deformation of the Heisenberg group. The book will be of interest to probabilists and quantum probabilists. Specialists in algebraic structures who are curious about the role of their concepts in probability theory as well as quantum theory may find the book interesting.

The reader should have some knowledge of functional analysis, operator algebras, and probability theory.

Commutative Algebra

Addison Wesley Longman

Presents the proceedings of the Second

International Conference on Commutative Ring Theory in Fes, Morocco.

The text details developments in commutative algebra, highlighting the theory of rings and ideals. It explores commutative algebra's connections with and applications to topological algebra and algebraic geometry.

**Commutative Algebra**

Springer

The first Joint AMS-India Mathematics Meeting was held in Bangalore (India).

This book presents articles written by speakers from a special session on commutative algebra and algebraic geometry. Included are contributions from some leading researchers

around the world in this subject area. The volume contains new and original research papers and survey articles suitable for graduate students and researchers interested in commutative algebra and algebraic geometry.

**Analytic Methods in Commutative Algebra**

CRC Press

For any researcher working in representation theory, algebraic or arithmetic geometry.

*Constructive Commutative Algebra*

Springer Science & Business Media

Contains contributions by over 25 leading international mathematicians in the areas of commutative algebra and algebraic geometry. The text presents developments and results based on, and inspired by, the work of Mario Fiorentini. It covers topics ranging from almost numerical invariants of algebraic curves to deformation of projective schemes.

*Recent Advances in Commutative Rings, Integer-Valued Polynomials, and Polynomial Functions* CRC Press

This book provides an introduction to recent developments in the theory of blow up algebras - Rees algebras, associated graded rings, Hilbert functions, and birational morphisms. The emphasis is on deriving properties of rings from their specifications in terms of generators and relations. While this limits the generality of many results, it opens the way for the application of computational methods. A highlight of the book is the chapter on advanced computational methods in algebra using Gröbner basis theory and advanced commutative algebra. The author presents the Gröbner basis algorithm and shows how it can be used to resolve computational questions in algebra. This

volume is intended for advanced students in commutative algebra, algebraic geometry and computational algebra, and homological algebra. It can be used as a reference for the theory of Rees algebras and related topics.

*A Course in Commutative Algebra* American Mathematical Soc.

Includes current work of 38 renowned contributors that details the diversity of thought in the fields of commutative algebra and multiplicative ideal theory. Summarizes recent findings on classes of going-down domains and the going-down property, emphasizing new characterizations and applications, as well as generalizations for commutative rings with *Commutative Algebra* CRC Press

Ideal for graduate students and researchers, this book presents a unified treatment of the central notions of integral closure.

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