

Q Vision Hf Series X Ray Generators

This volume, following in the tradition of a similar 2010 publication by the same editors, is an outgrowth of an international conference, “Fractals and Related Fields II,” held in June 2011. The book provides readers with an overview of developments in the mathematical fields related to fractals, including original research contributions as well as surveys from many of the leading experts on modern fractal theory and applications. The chapters cover fields related to fractals such as: *geometric measure theory *ergodic theory *dynamical systems *harmonic and functional analysis *number theory *probability theory Further Developments in Fractals and Related Fields is aimed at pure and applied mathematicians working in the above-mentioned areas as well as other researchers interested in discovering the fractal domain. Throughout the volume, readers will find interesting and motivating results as well as new avenues for further research.

This volume consists of five research articles, each dedicated to a significant topic in the mathematical theory of the Navier-Stokes equations, for compressible and incompressible fluids, and to related questions. All results given here are new and represent a noticeable contribution to the subject. One of the most famous predictions of the Kolmogorov theory of turbulence is the so-called Kolmogorov-obukhov five-thirds law. As is known, this law is heuristic and, to date, there is no rigorous justification. The article of A. Biryuk deals with the Cauchy problem for a multi-dimensional Burgers equation with periodic boundary conditions. Estimates in suitable norms for the corresponding solutions are derived for "large" Reynolds numbers, and their relation with the Kolmogorov-Obukhov law are discussed. Similar estimates are also obtained for the Navier-Stokes equation. In the late sixties J. L. Lions introduced a "perturbation" of the Navier Stokes equations in which he added in the linear momentum equation the hyper dissipative term (-Ll),Bu, f3 ~ 5/4, where Ll is the Laplace operator. This term is referred to as an "artificial" viscosity. Even though it is not physically moti vated, artificial viscosity has proved a useful device in numerical simulations of the Navier-Stokes equations at high Reynolds numbers. The paper of of D. Chae and J. Lee investigates the global well-posedness of a modification of the Navier Stokes equation similar to that introduced by Lions, but where now the original dissipative term -Llu is replaced by (-Ll)O:u, 0 S Ct

Thisseries is devoted to the publication of monographs, lecture resp. seminar notes, and other materials arising from programs of the OSU Mathemaical Research Institute. This includes proceedings of conferences or workshops held at the Institute, and other mathematical writings.

Mathematics of the USSR: Izvestija

The Structure of Compact Groups

Intelligent Visual Surveillance

Topics in Noncommutative Algebra

Lectures on Concurrency and Petri Nets

Integration Theory

This publication is aimed at students and teachers involved in programmes that train medical physicists for work in diagnostic radiology. It provides, in the form of a syllabus, a comprehensive overview of the basic medical physics knowledge required for the practice of modern diagnostic radiology. This makes it particularly useful for graduate students and residents in medical physics programmes. The material presented in the publication has been endorsed by the major international organisations and is the foundation for academic and clinical courses in both diagnostic radiology physics and in emerging areas such as imaging in radiotherapy.

“Visual Sensing and its Applications: Integration of Laser Sensors to Industrial Robots” provides comprehensive and up-to-date coverage of research and development on this robotic vision system. A laser-structured light is the main concern in discussions of visual sensing. Also addressed in this book are all components of the robotic vision system and an emphasis on how to increase the accuracy of the system using three levels of calibration. This includes calibration of the vision system (eye calibration), calibration of eye-to-hand configuration and calibration of robot kinematics (hand calibration). With the integration of the laser sensors to industrial robots numerous applications in the field of robotic welding, grinding, machining, inspection, and palletizing are illustrated based on practical engineering projects in order to demonstrate how the visual sensing is performed. The book will serve as a valuable resource for researchers and engineers in the areas of robotics and machine vision. Dr. Zhongxue Gan is a vice chairman and chief scientist of the ENN Group, China. He serves as a member of the National Energy Expert Consultation Committee of China and member of the National Coal Council of the USA. He is also a co-founder of Intersmart Robotic Systems Co. Ltd., China. He was a research fellow in flexible automation systems at ABB and a founding director of ABB Corporate Research Robot Laboratories, both in the USA and in China. Dr. Qing Tang is a co-founder and CEO of Intersmart Robotic Systems Co. Ltd., China and an adjunct professor in Physics at Sichuan University, China. He was a principle consulting engineer and project manager at the ABB Corporate Research Robot Laboratory in the USA. Motivated by the importance of the Campbell, Baker, Hausdorff, Dynkin Theorem in many different branches of Mathematics and Physics (Lie group-Lie algebra theory, linear PDEs, Quantum and Statistical Mechanics, Numerical Analysis, Theoretical Physics, Control Theory, sub-Riemannian Geometry), this monograph is intended to: fully enable readers (graduates or specialists, mathematicians, physicists or applied scientists, acquainted with Algebra or not) to understand and apply the statements and numerous corollaries of the main result, provide a wide spectrum of proofs from the modern literature, comparing different techniques and furnishing a unifying point of view and notation, provide a thorough historical background of the results, together with unknown facts about the effective early contributions by Schur, Poincaré, Pascal, Campbell, Baker, Hausdorff and Dynkin, give an outlook on the applications, especially in Differential Geometry (Lie group theory) and Analysis (PDEs of subelliptic type) and quickly enable the reader, through a description of the state-of-art and open problems, to understand the modern literature concerning a theorem which, though having its roots in the beginning of the 20th century, has not ceased to provide new problems and applications. The book assumes some undergraduate-level knowledge of algebra and analysis, but apart from that is self-contained. Part II of the monograph is devoted to the proofs of the algebraic background. The monograph may therefore provide a tool for beginners in Algebra.

A Primer for the Student – A Handbook for the Expert

Generalized Topological Degree and Semilinear Equations

Problems in Operator Theory

Veterinary Practice News

Volume 2 – Contemporary Analysis

18th IACR International Conference on Practice and Theory in Public-Key Cryptography, Gaithersburg, MD, USA, March 30 -- April 1, 2015, Proceedings

Competition Science Vision (monthly magazine) is published by Pratiyogita Darpan Group in India and is one of the best Science monthly magazines available for medical entrance examination students in India. Well-qualified professionals of Physics, Chemistry, Zoology and Botany make contributions to this magazine and craft it with focus on providing complete and to-the-point study material for aspiring candidates. The magazine covers General Knowledge, Science and Technology news, Interviews of toppers of examinations, study material of Physics, Chemistry, Zoology and Botany with model papers, reasoning test questions, facts, quiz contest, general awareness and mental ability test in every monthly issue.

Here is a book devoted to well-structured and thus efficiently solvable convex optimization problems, with emphasis on conic quadratic and semidefinite programming. The authors present the basic theory underlying these problems as well as their numerous applications in engineering, including synthesis of filters, Lyapunov stability analysis, and structural design. The authors also discuss the complexity issues and provide an overview of the basic theory of state-of-the-art polynomial time interior point methods for linear, conic quadratic, and semidefinite programming. The book’s focus on well-structured convex problems in conic form allows for unified theoretical and algorithmical treatment of a wide spectrum of important optimization problems arising in applications.

This three-volume set (CCIS 1367-1368) constitutes the refereed proceedings of the 5th International Conference on Computer Vision and Image Processing, CVIP 2020, held in Prayagraj, India, in December 2020. Due to the COVID-19 pandemic the conference was partially held online. The 134 papers papers were carefully reviewed and selected from 352 submissions. The papers present recent research on such topics as biometrics, forensics, content protection, image enhancement/super-resolution/restoration, motion and tracking, image or video retrieval, image, image/video processing for autonomous vehicles, video scene understanding, human-computer interaction, document image analysis, face, iris, emotion, sign language and gesture recognition, 3D image/video processing, action and event detection/recognition, medical image and video analysis, vision-based human GAIT analysis, remote sensing, and more.

Computation and Applied Mathematics

Diagnostic Radiology Physics

The Arithmetic of Function Fields

Canadian Journal of Mathematics

Commutative View

The Theorem of Campbell, Baker, Hausdorff and Dynkin

Advanced Calculus: An Introduction to Modem Analysis, an advanced undergraduate textbook,provides mathematics majors, as well as students who need mathematics in their field of study,with an introduction to the theory and applications of elementary analysis. The text presents, inan accessible form, a carefully maintained balance between abstract concepts and that serves to bridge the gap between the two- or three-semester calculus sequence andsenior/graduate level courses in the theory and applications of ordinary and partial differentialequations, complex variables, numerical methods, and measure and integration theory.The book focuses on topological concepts, such as compactness, connectedness, and metric spaces, including Fourier series, numerical analysis, complex integration, generalizedfunctions, and Fourier and Laplace transforms. Applications from genetics, spring systems,enzyme transfer, and a thorough introduction to the classical vibrating string, heat transfer, andbrachistochrone problems illustrate this book’s usefulness to the non-mathematics major. Extensiveproblem book test the student’s understanding of the topics andhelp develop the student’s ability to handle more abstract mathematical ideas.Advanced Calculus: An Introduction to Modem Analysis is intended for junior- and senior-levelundergraduate students in mathematics, biology, engineering, physics, and other related disciplines.An excellent textbook for a one-year course in calculus, this text provides a comprehensive treatment of the subject, covering all the methods employed in thistext will increase students’ mathematical maturity and prepare them solidly for senior/graduatelevel topics. The wealth of materials in the text allows the instructor to select topics that are ofspecial interest to the student. A two- or three-semester calculus sequence is required for successfuluse of this book.

This book is based on the proceedings of the Fifth Northeast Conference on General Topology and Applications, held at The College of Staten Island – The City University of New York. It provides insight into the relationship between general topology and other areas of mathematics.

This book describes many new results and extensions of the theory of generalized topological degree for densely defined A-proper operators and presents important applications, particularly to boundary value problems of nonlinear ordinary and partial differential equations that are intractable under any other existing theory. A-proper mappings arise naturally in the dimensional space via the finite dimensional approximation. The theory subsumes classical theory involving compact vector fields as well as the more recent theories of condensing vector-fields, strongly monotone, and strongly accretive maps. Researchers and graduate students in mathematics, applied mathematics, and physics who make use of nonlinear analysis will find this a valuable resource for new techniques.

Proceedings of the Workshop at the Ohio State University, June 17-26, 1991

Linear Algebra in Action

Global Differential Geometry

Vita Mathematica

Computer Vision and Image Processing

Holomorphy and Convexity in Lie Theory

*** Presents extensive surveys by van den Ban, Schlichtkrull, and Delorme of the recent progress in deriving the Plancherel theorem on reductive symmetric spaces * Well suited for both graduate students and researchers in semisimple Lie theory and neighboring fields, possibly even mathematical cosmology * Knowledge of basic representation theory of Lie groups as well as familiarity with semisimple Lie groups, symmetric spaces, and parabolic subgroups is required**

This book is a companion volume to Graduate Algebra: Commutative View (published as volume 73 in this series). The main and most important feature of the book is that it presents a unified approach to many important topics, such as group theory, ring theory, Lie algebras, and gives conceptual proofs of many basic results of noncommutative algebra. There are also a number of major results in noncommutative algebra that are usually found only in technical works, such as Zelmanov’s proof of the restricted Burnside problem in group theory, word problems in groups, Tits’s alternative in algebraic groups, PI algebras, and many of the roles that Coxeter diagrams play in algebra. The first half of the book can serve as a one-semester course on noncommutative algebra, whereas the remaining part of the book describes some of the major directions of research in the past 100 years. The main text is extended through several appendices, which permits the inclusion of more advanced material, and numerous exercises. The only prerequisite for using the book is an undergraduate course in algebra; whenever necessary, results are quoted from Graduate Algebra: Commutative View.

This book is an expanded text for a graduate course in commutative algebra, focusing on the algebraic underpinnings of algebraic geometry and of number theory. Accordingly, the theory of affine algebras is featured, treated both directly and via the theory of Noetherian and Artinian modules, and the theory of graded algebras is included to provide the foundation for projective varieties. Major topics include the theory of modules over a principal ideal domain, and its applications to matrix theory (including the Jordan decomposition), the Galois theory of field extensions, transcendence degree, the prime spectrum of an algebra, localization, and the classical theory of Noetherian and Artinian rings. Later chapters include some algebraic theory of elliptic curves (featuring the Mordell-Weil theorem) and valuation theory, including local fields. One feature of the book is an extension of the text through a series of appendices. This permits the inclusion of more advanced material, such as transcendental field extensions, the discriminant and resultant, the theory of Dedekind domains, and basic theorems of rings of algebraic integers. An extended appendix on derivations includes the Jacobian conjecture and Makar-Limanov’s theory of locally nilpotent derivations. Grobner bases can be found in another appendix. Exercises provide a further extension of the text. The book can be used both as a textbook and as a reference source.

Contributions to Current Challenges in Mathematical Fluid Mechanics

Visual Sensing and its Applications

Integration of Laser Sensors to Industrial Robots

Graduate Algebra

A Mathematical View of Interior-point Methods in Convex Optimization

Functional Analysis, Calculus of Variations and Optimal Control

This book constitutes the refereed proceedings of the 4th Chinese Conference, IVS 2016, held in Beijing, China, in October 2016. The 19 revised full papers presented were carefully reviewed and selected from 45 submissions. The papers are organized in topical sections on low-level preprocessing, surveillance systems; tracking, robotics; identification, detection, recognition; behavior, activities, crowd analysis.

This is one of the few books available in the literature that contains problems devoted entirely to the theory of operators on Banach spaces and Banach lattices. The book contains complete solutions to the more than 600 exercises in the companion volume, An Invitation to Operator Theory, Volume 50 in the AMS series Graduate Studies in Mathematics, also by Abramovich and Aliprantis. The exercises and solutions contained in this volume serve many purposes. First, they provide an opportunity to the readers to test their understanding of the theory. Second, they are used to demonstrate explicitly technical details in the proofs of many results in operator theory, providing the reader with rigorous and complete accounts of such details. Third, the exercises include many well-known results whose proofs are not readily available elsewhere. Finally, the book contains a considerable amount of additional material and further developments. By adding extra material to many exercises the authors have managed to keep the presentation as self-contained as possible. The book can be very useful as a supplementary text to graduate courses in operator theory, real analysis, function theory, integration theory, measure theory, and functional analysis. It will also make a nice reference tool for researchers in physics, engineering, economics, and finance. This is a book written primarily for graduate students and early researchers in the fields of Analysis and Partial Differential Equations (PDEs). Coverage of the material is essentially self-contained, extensive and novel with great attention to details and rigour. The strength of the book primarily lies in its clear and detailed explanations, scope and coverage, highlighting and presenting deep and profound inter-connections between different related and seemingly unrelated disciplines within classical and modern mathematics and above

all the extensive collection of examples, worked-out and hinted exercises. There are well over 700 exercises of varying level leading the reader from the basics to the most advanced levels and frontiers of research. The book can be used either for independent study or for a year-long graduate level course. In fact it has its origin in a year-long graduate course taught by the author in Oxford in 2004–5 and various parts of it in other institutions later on. A good number of distinguished researchers and faculty in mathematics worldwide have started their research career from the course that formed the basis for this book.

Further Developments in Fractals and Related Fields

General Topology and Applications

A Handbook for Teachers and Students

Competition Science Vision

4th Chinese Conference, IVS 2016, Beijing, China, October 19, 2016, Proceedings

Advances in Petri Nets

This book constitutes the refereed proceedings of the 18th International Conference on Practice and Theory in Public-Key Cryptography, PKC 2015, held in Gaithersburg, MD, USA, in March/April 2015. The 36 papers presented in this volume were carefully reviewed and selected from 118 submissions. They are organized in topical sections named: public-key encryption; e-cash; cryptanalysis; digital signatures; password-based authentication; pairint-based cryptography; efficient constructions; cryptography with imperfect keys; interactive proofs; lattice-based cryptography; and identity-based, predicate, and functional encryption.

Functional analysis owes much of its early impetus to problems that arise in the calculus of variations. In turn, the methods developed there have been applied to optimal control, an area that also requires new tools, such as nonsmooth analysis. This self-contained textbook gives a complete course on all these topics. It is written by a leading specialist who is also a noted expositor. This book provides a thorough introduction to functional analysis and includes many novel elements as well as the standard topics. A short course on nonsmooth analysis and geometry completes the first half of the book whilst the second half concerns the calculus of variations and optimal control. The author provides a comprehensive course on these subjects, from their inception through to the present. A notable feature is the inclusion of recent, unifying developments on regularity, multiplier rules, and the Pontryagin maximum principle, which appear here for the first time in a textbook. Other major themes include existence and Hamilton-Jacobi methods. The many substantial examples, and the more than three hundred exercises, treat such topics as viscosity solutions, nonsmooth Lagrangians, the logarithmic Sobolev inequality, periodic trajectories, and systems theory. They also touch lightly upon several fields of application: mechanics, economics, resources, finance, control engineering. Functional Analysis, Calculus of Variations and Optimal Control is intended to support several different courses at the first-year or second-year graduate level, on functional analysis, on the calculus of variations and optimal control, or on some combination. For this reason, it has been organized with customization in mind. The text also has considerable value as a reference. Besides its advanced results in the calculus of variations and optimal control, its polished presentation of certain other topics (for example convex analysis, measurable selections, metric regularity, and nonsmooth analysis) will be appreciated by researchers in these and related fields.

The subject matter of compact groups is frequently cited in fields like algebra, topology, functional analysis, and theoretical physics. This book serves the dual purpose of providing a textbook on it for upper level graduate courses or seminars, and of serving as a source book for research specialists who need to apply the structure and representation theory of compact groups. After a gentle introduction to compact groups and their representation theory, the book presents self-contained courses on linear Lie groups, on compact Lie groups, and on locally compact abelian groups. Separate appended chapters contain the material for courses on abelian groups and on category theory. However, the thrust of the book points in the direction of the structure theory of not necessarily finite dimensional, nor necessarily commutative, compact groups, unfettered by weight restrictions or dimensional bounds. In the process it utilizes infinite dimensional Lie algebras and the exponential function of arbitrary compact groups. The first edition of 1998 and the second edition of 2006 were well received by reviewers and have been frequently quoted in the areas of instruction and research. For the present new edition the text has been cleaned of typographical flaws and the content has been conceptually sharpened in some places and polished and improved in others. New material has been added to various sections taking into account the progress of research on compact groups both by the authors and other writers. Motivation was provided, among other things, by questions about the structure of compact groups put to the authors by readers through the years following the earlier editions. Accordingly, the authors wished to clarify some aspects of the book which they felt needed improvement. The list of references has increased as the authors included recent publications pertinent to the content of the book.

Historical Research and Integration with Teaching

Liquid Metal Fast Breeder Reactor Program: sec. 4. Environmental impact of the LMFBR fuel cycle. sec. 5. Economic, social and other impacts

Algebraic Methods and Q-special Functions

Public-Key Cryptography -- PKC 2015

Function Spaces and Partial Differential Equations

AI Magazine

It now appears that the old argument about Lorentz vs Galileo relativity is passing into history. The Lorentz symmetry may soon become obsolete itself just as the Galileo symmetry did about 1900. The tremendous successes of QED represent real progress in our quest to understand nature. The answer is not to go as most “outsiders” but to go forward – beyond to new ideas and equations that will match nature even better than QED does. This book shows us a new view of relativity and quantum equations. It has new equations that extend Lorentz Maxwell and Dirac. Contents:Dimensions and Hypercomplex NumbersSpace and Motions ThereinClosed Spacetime PhysicsBig Object Motions and InteractionsBig Blobs Moving in SpaceQuantum InteractionsVery Little Blobs: Extra Dimensions and Non-Associativity?The Three Kinds of MassExpanding but Flat SpaceCurved Space in QuaternionsQuaternion ElectrodynamicsSummary of Hypercomplex Wave EquationsAppendix: Coupling Dirac and MaxwellA Simple Diagram for Long Distance Communication in a Closed Universe Readership: Mathematical physicists. keywords:Quantum;Relativistic;Quaternions;Hypercomplex-Numbers;Relativity;Gravity;Curved-Spacetime;Dirac;Conjugations;Octonions “The text is written in a very lively style, the obvious purpose being to arouse enthusiasm among young students for the foundations of modern physics.” Mathematical Reviews

This introductory text acts as a singular resource for undergraduates learning the fundamental principles and applications of integration theory.Chapters discuss: function spaces and functionals, extension of Daniell spaces, measures of Hausdorff spaces, spaces of measures, elements of the theory of real functions on R.

This volume contains a collection of well-written surveys provided by experts in Global Differential Geometry to give an overview over recent developments in Riemannian Geometry, Geometric Analysis and Symplectic Geometry. The papers are written for graduate students and researchers with a general interest in geometry, who want to get acquainted with the current trends in these central fields of modern mathematics.

Lie Theory

Measure Theory

Relativistic Reality: A Modern View

Harmonic Analysis on Symmetric Spaces – General Plancherel Theorems

A Short View of the First Principles of Differential Calculus

Literature

The aim of the series is to present new and important developments in pure and applied mathematics. Well established in the community over two decades, it offers a large library of mathematics including several important classics. The volumes supply thorough and detailed expositions of the methods and ideas essential to the topics in question. In addition, they convey their relationships to other parts of mathematics. The series is addressed to advanced readers wishing to thoroughly study the topic. Editorial Board Lev Birbrair, Universidade Federal do Ceará, Fortaleza, Brasil Victor P. Maslov, Russian Academy of Sciences, Moscow, Russia Walter D. Neumann, Columbia University, New York, USA Markus J. Pflaum, University of Colorado, Boulder, USA Dierk Schleicher, Jacobs University, Bremen, Germany Linear algebra permeates mathematics, perhaps more so than any other single subject. It plays an essential role in pure and applied mathematics, statistics, computer science, and many aspects of physics and engineering. This book conveys in a user-friendly way the basic and advanced techniques of linear algebra from the point of view of a working analyst. The techniques are illustrated by a wide sample of applications and examples that are chosen to highlight the tools of the trade. In short, this is material that many of us wish we had been taught as graduate students. Roughly the first third of the book covers the basic material of a first course in linear algebra. The remaining chapters are devoted to applications drawn from vector calculus, numerical analysis, control theory, complex analysis, convexity and functional analysis. In particular, fixed point theorems, extremal problems, matrix equations, zero location and eigenvalue location problems, and matrices with nonnegative entries are discussed. Appendices on useful facts from analysis and supplementary information from complex function theory are also provided for the convenience of the reader. In this new edition, most of the chapters in the first edition have been revised, some extensively. The revisions include changes in a number of proofs, either to simplify the argument, to make the logic clearer or, on occasion, to sharpen the result. New introductory sections on linear programming, extreme points for polyhedra and a Nevanlinna-Pick interpolation problem have been added, as have some very short introductory sections on the mathematics behind Google, Drazin inverses, band inverses and applications of SVD together with a number of new exercises.

Enables teachers to learn the history of mathematics and then incorporate it in undergraduate teaching.

An Introduction to Modern Analysis

Noncommutative View

Introduction to Algebraic and Constructive Quantum Field Theory

Second Edition

5th International Conference, CVIP 2020, Prayagraj, India, December 4-6, 2020, Revised Selected Papers, Part II

Mathematical Foundations and Connections

There has been revived interest in recent years in the study of special functions. Many of the latest advances in the field were inspired by the works of R. A. Askey and colleagues on basic hypergeometric series and I. G. Macdonald on orthogonal polynomials related to root systems. Significant progress was made by the use of algebraic techniques and combinatorial methods. The CRM organized a workshop for key researchers in the field to present an overview of current trends. This volume consists of the contributions to that workshop. The topics include basic hypergeometric functions, algebraic and representation-theoretic methods, combinatorics of symmetric functions, root systems

The authors present a rigorous treatment of the first principles of the algebraic and analytic core of quantum field theory. Their aim is to correlate modern mathematical theory with the explanation of the observed process of particle production and of particle-wave duality that heuristic quantum field theory provides. Many topics are treated in a mathematically rigorous way, from complex structures to the quantization of tachyons and domains of dependence for quantized wave equations. This work begins with a comprehensive analysis, in a universal format, of the structure and characterization of free fields, which is illustrated by applications to specific fields. Nonlinear local functions of both free fields (or Wick polynomials) are treated mathematically in a way that is consistent with the basic physical constraints and practice. Among other topics discussed are functional integration, Fourier transforms in Hilbert space, and implementability of canonical transformations. The authors address readers interested in fundamental mathematical physics and who have at least the technical background of a graduate course in quantum field theory. The lexicon connects the mathematical development with the underlying physical motivation or interpretation. The examples and problems illustrate the theory and relate it to the scientific literature. Originally published in 1992. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print titles from Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1867. This tutorial volume originates from the 4th Advanced Course on Petri Nets, ACPN 2003, held in Eichsttt, Germany in September 2003. In addition to lectures given at ACPN 2003, additional chapters have been commissioned to give a well-balanced presentation of the state of the art in the area. This book will be useful as both a reference and as a guide for the reader who is interested in an up-to-date overview of research and development in concurrent and distributed systems; of course, readers specifically interested in theoretical or applicational aspects of Petri nets will appreciate the book as well.

Advanced Calculus