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Complex Variables and Applications Complex Variables with Applications Complex Variables Complex Variables with Applications Complex Variables and Applications Introduction to Complex Variables and Applications COMPLEX VARIABLES Complex Variables and Applications Introduction to Complex Variables and Applications Advances in Latent Variables Holomorphic Operator Functions of One Variable and Applications Complex Variables Theory and Applications of Differentiable Functions of Several Variables Limit Theorems and Applications of Set-Valued and Fuzzy Set-Valued Random Variables Functional Equations in Several Variables Handbook of Latent Variable and Related Models Latent Variable Modeling and Applications to Causality Theory and Applications of Differentiable Functions of Several Variables Theory and Applications of Differentiable Functions of Several Variables, 6 Current Topics in the Theory and Application of Latent Variable Models Complex Variables Probability, Random Variables, and Random Processes Functions of Complex Variables and Some of Their Applications Functions of a Complex Variable Calculus: Calculus of several variables with applications to probability and vector analysis Theory and Applications of Differentiable Functions of Several Variables Functions of a Complex Variable with Applications Operational Calculus in Two Variables and Its Applications A Generalized Taylor's Formula for Functions of Several Variables and Certain of its Applications A Handbook of Real Variables Operational Calculus in Two Variables and Its Applications Topics in Polynomials of One and Several Variables and Their Applications Applications of Vector Analysis and Complex Variables in Engineering Ordered Random Variables: Theory and Applications Mathematical Analysis Cluster Analysis for Applications Theory and Applications of Differentiable Functions of Several Variables Spatial Relationships Between Two Georeferenced Variables Operational Calculus in Two Variables and Its Applications Quadratic Forms in Random Variables

Complex Variables and Applications

1984

complex variables provide powerful methods for attacking many difficult problems and it is the aim of this book to provide a thorough grounding in these methods and their application this new edition has been improved throughout and is ideal for use in undergraduate and introductory graduate courses in complex variables

Complex Variables with Applications

1983

explores the interrelations between real and complex numbers by adopting both generalization and specialization methods to move between them while simultaneously examining their analytic and geometric characteristics engaging exposition with discussions remarks questions and exercises to motivate understanding and critical thinking skills encludes numerous examples and applications relevant to science and engineering students

Complex Variables

2003

an introduction to complex variables that caters for undergraduate students in applied mathematics science and engineering

Complex Variables with Applications

2007-05-26

the second edition of this comprehensive and accessible text continues to offer students a challenging and enjoyable study of complex variables that is infused with perfect balanced coverage of mathematical theory and applied topics the author explains fundamental concepts and techniques with precision and introduces the students to complex variable theory through conceptual develop ment of analysis that enables them to develop a thorough understanding of the topics discussed geometric interpretation of the results wherever necessary has been inducted for making the analysis more accessible the level of the text assumes that the reader is acquainted with elementary real analysis beginning with the revision of the algebra of complex variables the book moves on to deal with analytic functions elementary functions complex integration sequences series and infinite products series expansions singularities and residues the application oriented chapters on sums and integrals conformal mappings laplace transform and some special topics provide a practical use perspective enriched with many numerical examples and exercises designed to test the student s comprehension of the topics covered this book is written for a one semester course in complex variables for students in the science and engineering disciplines

Complex Variables and Applications

1960

the book belonging to the series studies in theoretical and applied statistics selected papers from the statistical societies presents a peer reviewed selection of contributions on relevant topics organized by the editors on the occasion of the sis 2013 statistical conference advances in latent variables methods models and applications held at the department of economics and management of the university of brescia from june 19 to 21 2013 the focus of the book is on advances in statistical methods for analyses with latent variables in fact in recent years there has been increasing interest in this broad research area from both a theoretical and an applied point of view as the statistical latent variable approach allows the effective modeling of complex real life phenomena in a wide range of research fields a major goal of

the volume is to bring together articles written by statisticians from different research fields which present different approaches and experiences related to the analysis of unobservable variables and the study of the relationships between them

Introduction to Complex Variables and Applications

2021-03-25

this book presents holomorphic operator functions of a single variable and applications which are focused on the relations between local and global theories it is based on methods and technics of complex analysis of several variables

COMPLEX VARIABLES

2005-01-01

this book explores various topical trends in the theory of differentiable functions of several real variables and its applications among the subjects covered are imbedding of various spaces of differentiable functions defined on sets in euclidean space on a sphere and in a polydisc approximation of functions estimates for the norms of various integral operators in weighted space conditions for stabilization of a function to a polynomial sufficient conditions for multipliers construction of unconditional bases in anisotropic spaces existence of entire solutions for quasilinear equations and establishment of an asymptotic formula for the kernels of powers of the resolvent of elliptic operators

Complex Variables and Applications

1971

after the pioneering works by robbins 1944 1945 and choquet 1955 the notation of a set valued random variable called a random closed set in literatures was systematically introduced by kendall 1974 and matheron 1975 it is well known that the theory of set valued random variables is a natural extension of that of general real valued random variables or random vectors however owing to the topological structure of the space of closed sets and special features of set theoretic operations cf beer 27 set valued random variables have many special properties this gives new meanings for the classical probability theory as a result of the development in this area in the past more than 30 years the theory of set valued random variables with many applications has become one of new and active branches in probability theory in practice also we are often faced with random experiments whose outcomes are not numbers but are expressed in inexact linguistic terms

Introduction to Complex Variables and Applications

1948

this treatise deals with modern theory of functional equations in several variables and their applications to mathematics

Advances in Latent Variables

2015-04-01

this handbook covers latent variable models which are a flexible class of models for modeling multivariate data to explore relationships among observed and latent variables covers a wide class of important models models and statistical methods described provide tools for analyzing a wide spectrum of complicated data includes

illustrative examples with real data sets from business education medicine public health and sociology demonstrates the use of a wide variety of statistical computational and mathematical techniques

Holomorphic Operator Functions of One Variable and Applications

2009-08-29

this volume gathers refereed papers presented at the 1994 ucla conference on la tent variable modeling and application to causality the meeting was organized by the ucla interdivisional program in statistics with the purpose of bringing together a group of people who have done recent advanced work in this field the papers in this volume are representative of a wide variety of disciplines in which the use of latent variable models is rapidly growing the volume is divided into two broad sections the first section covers path models and causal reasoning and the papers are innovations from contributors in disciplines not traditionally associated with behavioural sciences e g computer science with judea pearl and public health with james robins also in this section are contri butions by rod mcdonald and michael sobel who have a more traditional approach to causal inference generating from problems in behavioural sciences the second section encompasses new approaches to questions of model selection with emphasis on factor analysis and time varying systems amemiya uses nonlinear factor analysis which has a higher order of complexity associated with the identifiability condi tions muthen studies longitudinal hierarchichal models with latent variables and treats the time vector as a variable rather than a level of hierarchy deleeuw extends exploratory factor analysis models by including time as a variable and allowing for discrete and ordi nal latent variables arminger looks at autoregressive structures and bock treats factor analysis models for categorical data

Complex Variables

2008-10-28

first published in 2013 routledge is an imprint of taylor francis an informa company

Theory and Applications of Differentiable Functions of Several Variables

1994

the idea of complex numbers dates back at least 300 years to gauss and euler among others today complex analysis is a central part of modern analytical thinking it is used in engineering physics mathematics astrophysics and many other fields it provides powerful tools for doing mathematical analysis and often yields pleasing and unanticipated answers this book makes the subject of complex analysis accessible to a broad audience the complex numbers are a somewhat mysterious number system that seems to come out of the blue it is important for students to see that this is really a very concrete set of objects that has very concrete and meaningful applications features this new edition is a substantial rewrite focusing on the accessibility applied and visual aspect of complex analysis this book has an exceptionally large number of examples and a large number of figures the topic is presented as a natural outgrowth of the calculus it is not a new language or a new way of thinking incisive applications appear throughout the book partial differential equations are used as a unifying theme

Limit Theorems and Applications of Set-Valued and Fuzzy Set-Valued Random Variables

2013-04-17

probability random variables and random processes is a comprehensive textbook on probability theory for engineers that provides a more rigorous mathematical framework than is usually encountered in undergraduate courses it is intended for first year graduate students who have some familiarity with probability and random variables though not necessarily of random processes and systems that operate on random signals it is also appropriate for advanced undergraduate students who have a strong

mathematical background the book has the following features several appendices include related material on integration important inequalities and identities frequency domain transforms and linear algebra these topics have been included so that the book is relatively self contained one appendix contains an extensive summary of 33 random variables and their properties such as moments characteristic functions and entropy unlike most books on probability numerous figures have been included to clarify and expand upon important points over 600 illustrations and matlab plots have been designed to reinforce the material and illustrate the various characterizations and properties of random quantities sufficient statistics are covered in detail as is their connection to parameter estimation techniques these include classical bayesian estimation and several optimality criteria mean square error mean absolute error maximum likelihood method of moments and least squares the last four chapters provide an introduction to several topics usually studied in subsequent engineering courses communication systems and information theory optimal filtering wiener and kalman adaptive filtering fir and iir and antenna beamforming channel equalization and direction finding this material is available electronically at the companion website probability random variables and random processes is the only textbook on probability for engineers that includes relevant background material provides extensive summaries of key results and extends various statistical techniques to a range of applications in signal processing

Functional Equations in Several Variables

1989

concise treatment of fundamental theory explores two dimensional laplace transform and basic definitions theorems applications of operational calculus in two variables includes tables of formulae for various categories of functions 1962 edition

Handbook of Latent Variable and Related Models

2011-08-11

the classical taylor s formula of advanced calculus is generalized extending the notion of the differentiability class cm with applications to maxima and minima and to sufficiency of jets

Latent Variable Modeling and Applications to Causality

2012-12-06

this concise well written handbook provides a distillation of real variable theory with a particular focus on the subject s significant applications to differential equations and fourier analysis ample examples and brief explanations with very few proofs and little axiomatic machinery are used to highlight all the major results of real analysis from the basics of sequences and series to the more advanced concepts of taylor and fourier series baire category and the weierstrass approximation theorem replete with realistic meaningful applications to differential equations boundary value problems and fourier analysis this unique work is a practical hands on manual of real analysis that is ideal for physicists engineers economists and others who wish to use the fruits of real analysis but who do not necessarily have the time to appreciate all of the theory valuable as a comprehensive reference a study guide for students or a quick review a handbook of real variables will benefit a wide audience

Theory and Applications of Differentiable Functions of Several Variables

1984

this volume presents an account of some of the most important work that has been done on various research problems in the theory of polynomials of one and several variables and their applications it is dedicated to p l chebyshev a leading russian mathematician

Theory and Applications of Differentiable Functions of Several Variables, 6

1979

this textbook presents the application of mathematical methods and theorems tosolve engineering problems rather than focusing on mathematical proofs applications of vector analysis and complex variables in engineering explains the mathematical principles in a manner suitable for engineering students who generally think quite differently than students of mathematics the objective is to emphasize mathematical methods and applications rather than emphasizing general theorems and principles for which the reader is referred to the literature vector analysis plays an important role in engineering and is presented in terms of indicial notation making use of the einstein summation convention this text differs from most texts in that symbolic vector notation is completely avoided as suggested in the textbooks on tensor algebra and analysis written in german by duschek and hochreiner in the 1960s the defining properties of vector fields the divergence and curl are introduced in terms of fluid mechanics the integral theorems of gauss the divergence theorem stokes and green are introduced also in the context of fluid mechanics the final application of vector analysis consists of the introduction of non cartesian coordinate systems with straight axes the formal definition of vectors and tensors the stress and strain tensors are defined as an application partial differential equations of the first and second order are discussed two dimensional linear partial differential equations of the second order are covered emphasizing the three types of equation hyperbolic parabolic and elliptic the hyperbolic partial differential equations have two real characteristic directions and writing the equations along these directions simplifies the solution process the parabolic partial differential equations have two coinciding characteristics this gives useful information regarding the character of the equation but does not help in solving problems the elliptic partial differential equations do not have real characteristics in contrast to most texts rather than abandoning the idea of using characteristics here the complex characteristics are determined and the differential equations are written along these characteristics this leads to a generalized complex variable system introduced by wirtinger the vector field is written in terms of a complex velocity and the divergence and the curl of the vector field is written in complex form reducing both equations to a single one complex variable methods are applied to elliptical problems in fluid mechanics and linear elasticity the techniques presented for solving parabolic problems are the laplace transform and separation of variables illustrated for problems of heat flow and soil mechanics hyperbolic problems of vibrating strings and bars governed by the wave equation are solved by the method of characteristics as well as by laplace transform the method of characteristics for quasi linear hyperbolic partial differential equations is illustrated for the case of a failing granular material such as sand underneath a strip footing the navier stokes equations are derived and discussed in the final chapter as an illustration of a highly non linear set of partial differential equations and the solutions are interpreted by illustrating the role of rotation curl in energy transfer of a fluid

Current Topics in the Theory and Application of Latent Variable Models

2013

ordered random variables have attracted several authors the basic building block of ordered random variables is order statistics which has several applications in extreme value theory and ordered estimation the general model for ordered random variables known as generalized order statistics has been introduced relatively recently by kamps 1995

Complex Variables

2019-04-16

this work is a textbook on mathematical analysis written by expert lecturers in the field this textbook other than the classical differentiation and integration tools for functions of several real variables metric spaces ordinary differential equations implicit function and so on also provides opportunities to go deeper into certain topics among them the ascoli arzelà theorem the regularity of convex functions in r n l p spaces and absolutely continuous functions all topics that are paramount in modern mathematical analysis other instances include the weierstrass theorem on polynomial approximation of continuous functions or peano s existence theorem typically only existence without uniqueness for nonlinear odes and systems under general assumptions the content is discussed in an elementary way and at a successive stage some topics

are examined from several more penetrating angles the agile organization of the subject matter helps instructors to effortlessly determine which parts to present during lectures and where to stop the authors believe that any textbook can contribute to the success of a lecture course only to a point and the choices made by lecturers are decisive in this respect the book is addressed to graduate or undergraduate honors students in mathematics physics astronomy computer science statistics and probability attending mathematical analysis courses at the faculties of science engineering economics and architecture

Probability, Random Variables, and Random Processes

2012-10-15

cluster analysis for applications deals with methods and various applications of cluster analysis topics covered range from variables and scales to measures of association among variables and among data units conceptual problems in cluster analysis are discussed along with hierarchical and non hierarchical clustering methods the necessary elements of data analysis statistics cluster analysis and computer implementation are integrated vertically to cover the complete path from raw data to a finished analysis comprised of 10 chapters this book begins with an introduction to the subject of cluster analysis and its uses as well as category sorting problems and the need for cluster analysis algorithms the next three chapters give a detailed account of variables and association measures with emphasis on strategies for dealing with problems containing variables of mixed types subsequent chapters focus on the central techniques of cluster analysis with particular reference to computational considerations interpretation of clustering results and techniques and strategies for making the most effective use of cluster analysis the final chapter suggests an approach for the evaluation of alternative clustering methods the presentation is capped with a complete set of implementing computer programs listed in the appendices to make the use of cluster analysis as painless and free of mechanical error as is possible this monograph is intended for students and workers who have encountered the notion of cluster analysis

Functions of Complex Variables and Some of Their Applications

1961

this book offers essential systematic information on the assessment of the spatial association between two processes from a statistical standpoint divided into eight chapters the book begins with preliminary concepts mainly concerning spatial statistics the following seven chapters focus on the methodologies needed to assess the correlation between two or more processes from theory introduced 35 years ago to techniques that have only recently been published furthermore each chapter contains a section on r computations to explore how the methodology works with real data references and a list of exercises are included at the end of each chapter the assessment of the correlation between two spatial processes has been tackled from several different perspectives in a variety of applications fields in particular the problem of testing for the existence of spatial association between two georeferenced variables is relevant for posterior modeling and inference one evident application in this context is the quantification of the spatial correlation between two images processes defined on a rectangular grid in a two dimensional space from a statistical perspective this problem can be handled via hypothesis testing or by using extensions of the correlation coefficient in an image processing framework these extensions can also be used to define similarity indices between images

Functions of a Complex Variable

1963

concise treatment of fundamental theory explores two dimensional laplace transform and basic definitions theorems applications of operational calculus in two variables includes tables of formulae for various categories of functions 1962 edition

Calculus: Calculus of several variables with applications to probability and vector analysis

1961

textbook for a one semester graduate course for students specializing in mathematical statistics or in multivariate analysis or reference for theoretical as well as applied statisticians confines its discussion to quadratic forms and second degree polynomials in real normal random vectors and matr

Theory and Applications of Differentiable Functions of Several Variables

1989

Functions of a Complex Variable with Applications

1958

Operational Calculus in Two Variables and Its Applications

2017-09-13

A Generalized Taylor's Formula for Functions of Several Variables and Certain of its Applications

2021-02-27

A Handbook of Real Variables

2011-06-28

Operational Calculus in Two Variables and Its Applications

1962

Topics in Polynomials of One and Several Variables and Their Applications

1993

Applications of Vector Analysis and Complex Variables in Engineering

2020-05-25

Ordered Random Variables: Theory and Applications

2016-11-29

Mathematical Analysis

2022

Cluster Analysis for Applications

2014-05-10

Theory and Applications of Differentiable Functions of Several Variables

1967

Spatial Relationships Between Two Georeferenced Variables

2020-09-22

Operational Calculus in Two Variables and Its Applications

2017-06-15

Quadratic Forms in Random Variables

1992-02-24