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multiple criteria decision making mcdm is the study of methods and procedures by which concerns about multiple conflicting criteria can be formally incorporated into the management planning process a key area of research in or ms mcdm is now being applied in many new areas including gis systems ai and group decision making this volume is in effect the third in a series of springer books by these editors all in the isor series and it brings all the latest developments in mcdm into focus looking at developments in the applications methodologies and foundations of mcdm it presents research from leaders in the field on such topics as problem structuring methodologies measurement theory and mcda recent developments in evolutionary multiobjective optimization habitual domains and dynamic mcdm in changeable spaces stochastic multicriteria acceptability analysis and many more chapters critical experiments in support of the design of the fast flux test reactor are to be carried out in three parts phase a the first of this series was devoted essentially to a study of control rod reactivity worths and rod interactions this report presents the results of an analysis of the data obtained by personnel of argonne national laboratory on zpr iii assemblies 48 and 48a details of the experiments are to be reported by anl multicriteria analysis is a rapidly growing aspect of operations research and management science with numerous practical applications in a wide range of fields this book presents all the recent advances in multicriteria analysis including multicriteria optimization goal programming outranking methods and disaggregation techniques the latest developments on robustness analysis preference elicitation and decision making when faced with incomplete information are also discussed together with applications in business performance evaluation finance and marketing finally the interactions of multicriteria analysis with other disciplines are also explored including among others data mining artificial intelligence and evolutionary methods computational retinal image analysis tools applications and perspectives gives an overview of contemporary retinal image analysis ria in the context of healthcare informatics and artificial intelligence specifically it provides a history of the field the clinical motivation for ria technical foundations image acquisition modalities instruments computational techniques for essential operations lesion detection e g optic disc in glaucoma microaneurysms in diabetes and validation as well as insights into current investigations drawing from artificial intelligence and big data this comprehensive reference is ideal for researchers and graduate students in retinal image analysis computational ophthalmology artificial intelligence biomedical engineering health informatics and more provides a unique well structured and integrated overview of retinal image analysis gives insights into future areas such as large scale screening programs precision medicine and computer assisted eye care includes plans and aspirations of companies and professional bodies examines the chromatographic and nonchromatographic methods available to identify measure and screen for nonmedical drug use highlighting the latest technologies in immunochemical analysis biosensors thinlayer gas chromatography high performance liquid chromatography and capillary electrophoresis a comprehensive alphabetic listing of over 400 controlled use drugs is provided thermal analysis ta has become an indispensable family of analytical techniques in the polymer research the increased importance of these techniques can be seen as the result of three more or less parallel developments a tempestuous development of ta measuring techniques in combination with a high degree of automation the strongly increased understanding of the underlaying theory and the increasing knowledge of the relation between the polymers chemical structure and their physical properties these areas are still in their developmental stages especially the third area the increasing knowledge of the dependence of physical properties on chemical structure just accentuated more and more the need for accurate thermoanalytical measurements and this knowledge is very important for the first stages of the development of new polymeric systems besides the contribution of ta remains necessary for the technical and commercial development of such a new polymer system the use of the various ta techniques in these processes is described in this book in nine chapters while chapter ten illustrates the information obtained about different polymers during special case studies this book illustrates in this way applications of a wide variety of ta techniques whilst it is written from a materials characterisation rather than from a ta point of view with attention being paid to the chemical structure physical properties correlations human reliability is an issue that is increasingly discussed in the process and manufacturing industries to check factors that influence operator performance and trigger errors human factor and reliability analysis to prevent losses in industrial processes an operational culture perspective provides a multidisciplinary analysis of work concepts and environments to reduce human error and prevent material energy image and time losses the book presents a methodology for the quantification and investigation of human reliability and verification of the influence of human factors in the generation of process losses consisting of the following steps contextualization data collection and results performing task and loss observation socio technical variable analyses and data processing investigating human reliability concepts and models in situations of human error in practice the book identifies where low reliability occurs and then visualizes where and how to perform an intervention this guide is an excellent resource for professionals in chemical petrochemical oil and nuclear industries for managing and analyzing safety and loss risks and for students in chemical and process engineering relates human reliability to the environment leadership decision models possible mistakes and successes mental map constructions and organizational cultures provides techniques for the diagnosis of human and operational reliability gives examples of the application of methodologies in the stage of diagnosis and program construction discusses competences for the analysis of process losses in industry investigates real life situations where human errors cause losses includes practical examples and case studies subjects of analysis is a work of incomparable significance for the field of psychoanalysis ogden reworks and recombines the basic contributions of freud klein and winnicott to create a vision of the analytic process that has never existed beforestartling in its freshness moving in its depth and integrity this volume is dedicated to our teacher and friend hans triebel the core of the book is based on lectures given at the international conference function spaces differential operators and nonlinear analysis fsdona 01 held in teistungen thuringia germany from june 28 to july 4 2001 in honour of his 65th birthday this was the fifth in a series of meetings organised under the same name by scientists from finland helsinki oulu the czech republic prague plzen and germany jena promoting the collaboration of specialists in east and west working in these fields this conference was a very special event because it celebrated hans triebel s extraordinary impact on mathematical analysis the development of the mod ern theory of function spaces in the last 30 years and its application to various branches in both pure and applied mathematics is deeply influenced by his lasting contributions in a series of books hans triebel has given systematic treatments of the theory of function spaces from different points of view thus revealing its interdependence with interpolation theory harmonic analysis partial differential equations nonlinear operators entropy spectral theory and most recently anal ysis on fractals the presented collection of papers is a tribute to hans triebel s distinguished work the book is subdivided into three parts part i contains the two invited lectures by o v besov moscow and d e edmunds sussex having a survey character and honouring hans triebel s contributions this study starts with the basic theory of topological groups harmonic analysis and unitary representations it then concentrates on geometric structure harmonic analysis and unitary representation theory in commutative spaces in this book we attempt to develop the fundamental results of resistive network analysis based upon a sound mathematical structure the axioms upon

which our development is based are ohm s law kirchhoff s voltage law and kirchhoff s current law in order to state these axioms precisely and use them in the development of our network analysis an elaborate mathematical structure is introduced involving concepts of graph theory linear algebra and one dimensional algebraic topology the graph theory and one dimensional algebraic topology used are developed from first principles the reader needs no background in these subjects however we do assume that the reader has some familiarity with elementary linear algebra it is now stylish to teach elementary linear algebra at the sophomore college level and we feel that the require ment that the reader should be familiar with elementary linear algebra is no more demanding than the usual requirement in most electrical engineering texts that the reader should be familiar with calculus in this book however no calculus is needed although no formal training in circuit theory is needed for an understanding of the book such experience would certainly help the reader by presenting him with familiar examples relevant to the mathematical abstractions introduced it is our intention in this book to exhibit the effect of the topological properties of the network upon the branch voltages and branch currents the objects of interest in network analysis this four volume set of lncs 12821 lncs 12822 lncs 12823 and lncs 12824 constitutes the refereed proceedings of the 16th international conference on document analysis and recognition icdar 2021 held in lausanne switzerland in september 2021 the 182 full papers were carefully reviewed and selected from 340 submissions and are presented with 13 competition reports the papers are organized into the following topical sections document analysis for literature search document summarization and translation multimedia document analysis mobile text recognition document analysis for social good indexing and retrieval of documents physical and logical layout analysis recognition of tables and formulas and natural language processing nlp for document understanding classic work on analysis and design of finite processes for approximating solutions of analytical problems features algebraic equations matrices harmonic analysis quadrature methods and much more the subject of this book is the analysis and processing of structural or quantitative data with emphasis on classification methods new algorithms as well as applications in various fields related to data analysis and classification the book presents the state of the art in world wide research and application of methods from the fields indicated above and consists of survey papers as well as research papers this volume is a collection of papers reflecting the conference held in nahariya israel in honor of professor lawrence zalcman s sixtieth birthday the papers many written by leading authorities range widely over classical complex analysis of one and several variables differential equations and integral geometry topics covered include but are not limited to these areas within the theory of functions of one complex variable complex dynamics elliptic functions kleinian groups quasiconformal mappings tauberian theorems univalent functions and value distribution theory altogether the papers in this volume provide a comprehensive overview of activity in complex analysis at the beginning of the twenty first century and testify to the continuing vitality of the interplay between classical and modern analysis it is suitable for graduate students and researchers interested in computer analysis and differential geometry information for our distributors this book is co published with bar ilan university this monograph collects some fundamental mathematical techniques that are required for the analysis of algorithms it builds on the fundamentals of combinatorial analysis and complex variable theory to present many of the major paradigms used in the precise analysis of algorithms emphasizing the more difficult notions the authors cover recurrence relations operator methods and asymptotic analysis in a format that is concise enough for easy reference yet detailed enough for those with little background with the material this timely publication covers prompt measurements as well as delayed activation measurements used in chemical analysis of the elements it describes the various possibilities of activation neutrons charged ions and photons also discussed are the advantages and disadvantages of each activation method these volumes are important for those in geology archaeology biology analytical chemistry radioanalytical and nuclear chemistry the semiconductor industry and others interrupted time series analysis develops a comprehensive set of models and methods for drawing causal inferences from time series it provides example analyses of social behavioral and biomedical time series to illustrate a general strategy for building autoregressive integrated moving average arima impact models additionally the book supplements the classic box jenkins tiao model building strategy with recent auxiliary tests for transformation differencing and model selection not only does the text discuss new developments including the prospects for widespread adoption of bayesian hypothesis testing and synthetic control group designs but it makes optimal use of graphical illustrations in its examples with forty completed example analyses that demonstrate the implications of model properties interrupted time series analysis will be a key inter disciplinary text in classrooms workshops and short courses for researchers familiar with time series data or cross sectional regression analysis but limited background in the structure of time series processes and experiments a number of advances have taken place in panel data analysis during the pastthree decades and it continues to be one of the most active areas of research this volume contains 13 significant contributions focusing on modelling strategies data issues theoretical analysis and applications applied econometrics papers on the economics of labor health telecommunications finance and macroeconomics are provided as well as a survey of recent theoretical developments in panal data analysis contributors include both well known scholars and younger researchers from australia canada europe and the united states of america this book systematically introduces the theory of nonlinear analysis providing an overview of topics such as geometry of banach spaces differential calculus in banach spaces monotone operators and fixed point theorems it also discusses degree theory nonlinear matrix equations control theory differential and integral equations and inclusions the book presents surjectivity theorems variational inequalities stochastic game theory and mathematical biology along with a large number of applications of these theories in various other disciplines nonlinear analysis is characterised by its applications in numerous interdisciplinary fields ranging from engineering to space science hydromechanics to astrophysics chemistry to biology theoretical mechanics to biomechanics and economics to stochastic game theory organised into ten chapters the book shows the elegance of the subject and its deep rooted concepts and techniques which provide the tools for developing more realistic and accurate models for a variety of phenomena encountered in diverse applied fields it is intended for graduate and undergraduate students of mathematics and engineering who are familiar with discrete mathematical structures differential and integral equations operator theory measure theory banach and hilbert spaces locally convex topological vector spaces and linear functional analysis the first edition of this ground breaking and widely used book introduced a comprehensive textbook on radar systems analysis and design providing hands on experience facilitated by its companion matlab software the book very quickly turned into a bestseller based on feedback provided by several users and drawing from the author s own teaching experience the 4th edition adopts a new approach the presentation in this edition takes the reader on a scientific journey whose major landmarks comprise the different radar sub systems and components along the way the different relevant radar subsystems are analyzed and discussed in great level of detail understanding the radar signal types and their associated radar signal processing techniques are key to understating how radar systems function each chapter provides the necessary mathematical and analytical coverage required for a sound understanding of radar theory additionally dedicated matlab functions programs enhance the understanding of the theory and establish a means to perform radar system analysis and design trades the software provides users with numerous varieties of graphical outputs additionally a complete set of matlab code that generates all plot and graphs found within the pages of this textbook are also available all companion matlab code can be downloaded from the book s web page the 4th edition takes advantage of the new features offered by matlab 2021 release brings the text to a current state of the art incorporates much of the feedback received from users using this book as a

text and from practicing engineers accordingly several chapters have been rewritten presents unique topics not found in other books maintains a comprehensive and exhaustive presentation restructures the presentation to be more convenient for course use provides a post course reference for engineering students as they enter the field offers a companion solutions manual for instructors the 4th edition will serve as a valuable tool to students and radar engineers by helping them better analyze and understand the many topics of radar systems this book is written primarily as a graduate level textbook although parts of it can be used as a senior level course a companion solutions manual has been developed for use by instructors this book presents the first computer program automating the task of componential analysis of kinship vocabularies the book examines the program in relation to two basic problems the commonly occurring inconsistency of componential models and the huge number of alternative componential models dependence analysis may be considered to be the second edition of the author s 1988 book dependence analysis for supercomputing it is however a completely new work that subsumes the material of the 1988 publication this book is the third volume in the series loop transformations for restructuring compilers this series has been designed to provide a complete mathematical theory of transformations that can be used to automatically change a sequential program containing fortran like do loops into an equivalent parallel form in dependence analysis the author extends the model to a program consisting of do loops and assignment statements where the loops need not be sequentially nested and are allowed to have arbitrary strides in the context of such a program the author studies in detail dependence between statements of the program caused by program variables that are elements of arrays dependence analysis is directed toward graduate and undergraduate students and professional writers of restructuring compilers the prerequisite for the book consists of some knowledge of programming languages and familiarity with calculus and graph theory no knowledge of linear programming is required computational methods in power systems require significant inputs from diverse disciplines such as data base structures numerical analysis etc strategic decisions in sparsity exploitation and algorithm design influence large scale simulation and high speed computations selection of programming paradigm shapes the design its modularity and reusability this has a far reaching effect on software maintenance computational methods for large sparse power systems analysis an object oriented approach provides a unified object oriented oo treatment for power system analysis sparsity exploitation techniques in oo paradigm are emphasized to facilitate large scale and fast computing specific applications like large scale load flow short circuit analysis state estimation and optimal power flow are discussed within this framework a chapter on modeling and computational issues in power system dynamics is also included motivational examples and illustrations are included throughout the book a library of c classes provided along with this book has classes for transmission lines transformers substation etc a cd rom with c programs is also included it contains load flow short circuit analysis and network topology processor applications power system data is provided and systems up to 150 buses can be studied other special features this book is the first of its kind covering power system applications designed with an oo perspective chapters on object orientation for modeling of power system computations data structure large sparse linear system solver sparse qr decomposition in an oo framework are special features of this book this book offers a systematic presentation of up to date material scattered throughout the literature from the methodology point of view it reviews the basic theories and methods with many interesting problems in partial and ordinary differential equations differential geometry and mathematical physics as applications and provides the necessary preparation for almost all important aspects in contemporary studies all methods are illustrated by carefully chosen examples from mechanics physics engineering and geometry statistical factor analysis and related methods theory andapplications in bridging the gap between the mathematical andstatistical theory of factor analysis this new work represents thefirst unified treatment of the theory and practice of factoranalysis and latent variable models it focuses on such areasas the classical principal components model and sample populationinference several extensions and modifications of principal components including q and three mode analysis and principal components in thecomplex domain maximum likelihood and weighted factor models factoridentification factor rotation and the estimation of factorscores the use of factor models in conjunction with various types ofdata including time series spatial data rank orders and nominalvariable applications of factor models to the estimation of functionalforms and to least squares of regression estimators this book consists of nine papers covering a number of basic ideas concepts and methods of nonlinear analysis as well as some current research problems thus the reader is introduced to the fascinating theory around brouwer s fixed point theorem to granas theory of topological transversality and to some advanced techniques of critical point theory and fixed point theory other topics include discontinuous differential equations new results of metric fixed point theory robust tracker design problems for various classes of nonlinear systems and periodic solutions in computer virus propagation models this book demonstrates the influence of geometry on the qualitative behaviour of solutions of quasilinear pdes on riemannian manifolds motivated by examples arising among others from the theory of submanifolds the authors study classes of coercive elliptic differential inequalities on domains of a manifold m with very general nonlinearities depending on the variable x on the solution u and on its gradient the book highlights the mean curvature operator and its variants and investigates the validity of strong maximum principles compact support principles and liouville type theorems in particular it identifies sharp thresholds involving curvatures or volume growth of geodesic balls in m to guarantee the above properties under appropriate keller osserman type conditions which are investigated in detail throughout the book and discusses the geometric reasons behind the existence of such thresholds further the book also provides a unified review of recent results in the literature and creates a bridge with geometry by studying the validity of weak and strong maximum principles at infinity in the spirit of omori yau s hessian and laplacian principles and subsequent improvements this book is a thorough and self contained treatise of martingales as a tool in stochastic analysis stochastic integrals and stochastic differential equations the book is clearly written and details of proofs are worked out electromagnetic analysis and condition monitoring of synchronous generators discover an insightful and complete overview of electromagnetic analysis and fault diagnosis in large synchronous generators in electromagnetic analysis and condition monitoring of synchronous generators a team of distinguished engineers delivers a comprehensive review of the electromagnetic analysis and fault diagnosis of synchronous generators beginning with an introduction to several types of synchronous machine structures the authors move on to the most common faults found in synchronous generators and their impacts on performance the book includes coverage of different modeling tools including the finite element method winding function and magnetic equivalent circuit as well as various types of health monitoring systems focusing on the magnetic field voltage current shaft flux and vibration finally electromagnetic analysis and condition monitoring of synchronous generators covers signal processing tools that can help identify hidden patterns caused by faults and machine learning tools enabling automated condition monitoring the book also includes a thorough introduction to condition monitoring in electric machines and its importance to synchronous generators comprehensive explorations of the classification of synchronous generators including armature arrangement machine construction and applications practical discussions of different types of electrical and mechanical faults in synchronous generators including short circuit faults eccentricity faults misalignment core related faults and broken damper bar faults in depth examinations of the modeling of healthy and faulty synchronous generators including analytical and numerical methods perfect for engineers working in electrical machine analysis maintenance and fault detection electromagnetic analysis and condition monitoring of synchronous generators is also an indispensable resource for professors and students in electrical power engineering

Trends in Multiple Criteria Decision Analysis 2010-09-10 multiple criteria decision making mcdm is the study of methods and procedures by which concerns about multiple conflicting criteria can be formally incorporated into the management planning process a key area of research in or ms mcdm is now being applied in many new areas including gis systems ai and group decision making this volume is in effect the third in a series of springer books by these editors all in the isor series and it brings all the latest developments in mcdm into focus looking at developments in the applications methodologies and foundations of mcdm it presents research from leaders in the field on such topics as problem structuring methodologies measurement theory and mcda recent developments in evolutionary multiobjective optimization habitual domains and dynamic mcdm in changeable spaces stochastic multicriteria acceptability analysis and many more chapters

Analysis of FTR. 1969 critical experiments in support of the design of the fast flux test reactor are to be carried out in three parts phase a the first of this series was devoted essentially to a study of control rod reactivity worths and rod interactions this report presents the results of an analysis of the data obtained by personnel of argonne national laboratory on zpr iii assemblies 48 and 48a details of the experiments are to be reported by anl

Handbook of Multicriteria Analysis 2010-05-25 multicriteria analysis is a rapidly growing aspect of operations research and management science with numerous practical applications in a wide range of fields this book presents all the recent advances in multicriteria analysis including multicriteria optimization goal programming outranking methods and disaggregation techniques the latest developments on robustness analysis preference elicitation and decision making when faced with incomplete information are also discussed together with applications in business performance evaluation finance and marketing finally the interactions of multicriteria analysis with other disciplines are also explored including among others data mining artificial intelligence and evolutionary methods

Computational Retinal Image Analysis 2019-11-19 computational retinal image analysis tools applications and perspectives gives an overview of contemporary retinal image analysis ria in the context of healthcare informatics and artificial intelligence specifically it provides a history of the field the clinical motivation for ria technical foundations image acquisition modalities instruments computational techniques for essential operations lesion detection e g optic disc in glaucoma microaneurysms in diabetes and validation as well as insights into current investigations drawing from artificial intelligence and big data this comprehensive reference is ideal for researchers and graduate students in retinal image analysis computational ophthalmology artificial intelligence biomedical engineering health informatics and more provides a unique well structured and integrated overview of retinal image analysis gives insights into future areas such as large scale screening programs precision medicine and computer assisted eye care includes plans and aspirations of companies and professional bodies

Outlines of Mineralogy, Geology, and Mineral Analysis 1836 examines the chromatographic and nonchromatographic methods available to identify measure and screen for nonmedical drug use highlighting the latest technologies in immunochemical analysis biosensors thinlayer gas chromatography high performance liquid chromatography and capillary electrophoresis a comprehensive alphabetic listing of over 400 controlled use drugs is provided

Analysis of Addictive and Misused Drugs 1994-10-20 thermal analysis ta has become an indispensable family of analytical techniques in the polymer research the increased importance of these techniques can be seen as the result of three more or less parallel developments a tempestuous development of ta measuring techniques in combination with a high degree of automation the strongly increased understanding of the underlaying theory and the increasing knowledge of the relation between the polymers chemical structure and their physical properties these areas are still in their developmental stages especially the third area the increasing knowledge of the dependence of physical properties on chemical structure just accentuated more and more the need for accurate thermoanalytical measurements and this knowledge is very important for the first stages of the development of new polymeric systems besides the contribution of ta remains necessary for the technical and commercial development of such a new polymer system the use of the various ta techniques in these processes is described in this book in nine chapters while chapter ten illustrates the information obtained about different polymers during special case studies this book illustrates in this way applications of a wide variety of ta techniques whilst it is written from a materials characterisation rather than from a ta point of view with attention being paid to the chemical structure physical properties correlations

Compositional Analysis by Thermogravimetry 1988 human reliability is an issue that is increasingly discussed in the process and manufacturing industries to check factors that influence operator performance and trigger errors human factor and reliability analysis to prevent losses in industrial processes an operational culture perspective provides a multidisciplinary analysis of work concepts and environments to reduce human error and prevent material energy image and time losses the book presents a methodology for the quantification and investigation of human reliability and verification of the influence of human factors in the generation of process losses consisting of the following steps contextualization data collection and results performing task and loss observation socio technical variable analyses and data processing investigating human reliability concepts and models in situations of human error in practice the book identifies where low reliability occurs and then visualizes where and how to perform an intervention this guide is an excellent resource for professionals in chemical petrochemical oil and nuclear industries for managing and analyzing safety and loss risks and for students in chemical and process engineering relates human reliability to the environment leadership decision models possible mistakes and successes mental map constructions and organizational cultures provides techniques for the diagnosis of human and operational reliability gives examples of the application of methodologies in the stage of diagnosis and program construction discusses competences for the analysis of process losses in industry investigates real life situations where human errors cause losses includes practical examples and case studies

Characterisation of Polymers by Thermal Analysis 2001-05-21 subjects of analysis is a work of incomparable significance for the field of psychoanalysis ogden reworks and recombines the basic contributions of freud klein and winnicott to create a vision of the analytic process that has never existed beforestartling in its freshness moving in its depth and integrity

Qualitative Chemical Analysis 1880 this volume is dedicated to our teacher and friend hans triebel the core of the book is based on lectures given at the international conference function spaces differential operators and nonlinear analysis fsdona 01 held in teistungen thuringia germany from june 28 to july 4 2001 in honour of his 65th birthday this was the fifth in a series of meetings organised under the same name by scientists from finland helsinki oulu the czech republic prague plzen and germany jena promoting the collaboration of specialists in east and west working in these fields this conference was a very special event because it celebrated hans triebel s extraordinary impact on mathematical analysis the development of the mod ern theory of function spaces in the last 30 years and its application to various branches in both pure and applied mathematics is deeply influenced by his lasting contributions in a series of books hans triebel has given systematic treatments of the theory of function spaces from different points of view thus revealing its interdependence with interpolation theory harmonic analysis partial differential equations nonlinear operators entropy spectral theory and most recently anal ysis on fractals the presented collection of papers is a tribute to hans triebel s distinguished work the book is subdivided into three parts part i contains the two invited lectures by o v besov moscow and d e edmunds sussex having a survey character and honouring hans triebel s contributions

Human Factor and Reliability Analysis to Prevent Losses in Industrial Processes 2022-03-23 this study starts with the basic theory of topological groups harmonic analysis and unitary representations it then concentrates on geometric structure harmonic analysis and unitary representation theory in commutative spaces

Subjects of Analysis 1977-07 in this book we attempt to develop the fundamental results of resistive network analysis based upon a sound mathematical structure the axioms upon which our development is based are ohm s law kirchhoff s voltage law and kirchhoff s current law in order to state these axioms precisely and use them in the development of our network analysis an elaborate mathematical structure is introduced involving concepts of graph theory linear algebra and one dimensional algebraic topology the graph theory and one dimensional algebraic topology used are developed from first principles the reader needs no background in these subjects however we do assume that the reader has some familiarity with elementary linear algebra it is now stylish to teach elementary linear algebra at the sophomore college level and we feel that the require ment that the reader should be familiar with elementary linear algebra is no more demanding than the usual requirement in most electrical engineering texts that the reader should be familiar with calculus in this book however no calculus is needed although no formal training in circuit theory is needed for an understanding of the book such experience would certainly help the reader by presenting him with familiar examples relevant to the mathematical abstractions introduced it is our intention in this book to exhibit the effect of the topological properties of the network upon the branch voltages and branch currents the objects of interest in network analysis

Function Spaces, Differential Operators and Nonlinear Analysis 2003-02-24 this four volume set of lncs 12821 lncs 12822 lncs 12823 and lncs 12824 constitutes the refereed proceedings of the 16th international conference on document analysis and recognition icdar 2021 held in lausanne switzerland in september 2021 the 182 full papers were carefully reviewed and selected from 340 submissions and are presented with 13 competition reports the papers are organized into the following topical sections document analysis for literature search document summarization and translation multimedia document analysis mobile text recognition document analysis for social good indexing and retrieval of documents physical and logical layout analysis recognition of tables and formulas and natural language processing nlp for document understanding

Harmonic Analysis on Commutative Spaces 2007 classic work on analysis and design of finite processes for approximating solutions of analytical problems features algebraic equations matrices harmonic analysis quadrature methods and much more

Mathematical Foundations of Network Analysis 2012-12-06 the subject of this book is the analysis and processing of structural or quantitative data with emphasis on classification methods new algorithms as well as applications in various fields related to data analysis and classification the book presents the state of the art in world wide research and application of methods from the fields indicated above and consists of survey papers as well as research papers

Document Analysis and Recognition – ICDAR 2021 2021-09-04 this volume is a collection of papers reflecting the conference held in nahariya israel in honor of professor lawrence zalcman s sixtieth birthday the papers many written by leading authorities range widely over classical complex analysis of one and several variables differential equations and integral geometry topics covered include but are not limited to these areas within the theory of functions of one complex variable complex dynamics elliptic functions kleinian groups quasiconformal mappings tauberian theorems univalent functions and value distribution theory altogether the papers in this volume provide a comprehensive overview of activity in complex analysis at the beginning of the twenty first century and testify to the continuing vitality of the interplay between classical and modern analysis it is suitable for graduate students and researchers interested in computer analysis and differential geometry information for our distributors this book is co published with bar ilan university

Applied Analysis 1988-01-01 this monograph collects some fundamental mathematical techniques that are required for the analysis of algorithms it builds on the fundamentals of combinatorial analysis and complex variable theory to present many of the major paradigms used in the precise analysis of algorithms emphasizing the more difficult notions the authors cover recurrence relations operator methods and asymptotic analysis in a format that is concise enough for easy reference yet detailed enough for those with little background with the material

Modern X-ray Analysis on Single Crystals 1980 this timely publication covers prompt measurements as well as delayed activation measurements used in chemical analysis of the elements it describes the various possibilities of activation neutrons charged ions and photons also discussed are the advantages and disadvantages of each activation method these volumes are important for those in geology archaeology biology analytical chemistry radioanalytical and nuclear chemistry the semiconductor industry and others

New Approaches in Classification and Data Analysis 2013-03-14 interrupted time series analysis develops a comprehensive set of models and methods for drawing causal inferences from time series it provides example analyses of social behavioral and biomedical time series to illustrate a general strategy for building autoregressive integrated moving average arima impact models additionally the book supplements the classic box jenkins tiao model building strategy with recent auxiliary tests for transformation differencing and model selection not only does the text discuss new developments including the prospects for widespread adoption of bayesian hypothesis testing and synthetic control group designs but it makes optimal use of graphical illustrations in its examples with forty completed example analyses that demonstrate the implications of model properties interrupted time series analysis will be a key inter disciplinary text in classrooms workshops and short courses for researchers familiar with time series data or cross sectional regression analysis but limited background in the structure of time series processes and experiments

Complex Analysis and Dynamical Systems II 2005 a number of advances have taken place in panel data analysis during the pastthree decades and it continues to be one of the most active areas of research this volume contains 13 significant contributions focusing on modelling strategies data issues theoretical analysis and applications applied econometrics papers on the economics of labor health telecommunications finance and macroeconomics are provided as well as a survey of recent theoretical developments in panal data analysis contributors include both well known scholars and younger researchers from australia canada europe and the united states of america

Elementary course in quantitative chemical analysis 1898 this book systematically introduces the theory of nonlinear analysis providing an overview of topics such as geometry of banach spaces differential calculus in banach spaces monotone operators and fixed point theorems it also discusses degree theory nonlinear matrix equations control theory differential and integral equations and inclusions the book presents surjectivity theorems variational inequalities stochastic game theory and mathematical biology along with a large number of applications of these theories in various other disciplines nonlinear analysis is characterised by its applications in numerous interdisciplinary fields ranging from engineering to space science hydromechanics to astrophysics chemistry to biology theoretical mechanics to biomechanics and economics to stochastic game theory organised into ten chapters the book shows the elegance of the subject and its deep rooted concepts and techniques which provide the tools for developing more realistic and accurate models for a variety of phenomena encountered in diverse applied fields it is intended for graduate and undergraduate students of mathematics and engineering who are familiar with discrete mathematical structures differential and integral equations operator theory measure theory banach and hilbert spaces locally convex topological vector spaces and linear functional analysis

Mathematics for the Analysis of Algorithms 2009-05-21 the first edition of this ground breaking and widely used book introduced a comprehensive textbook on radar systems analysis and design providing hands on experience facilitated by its companion matlab software the book very quickly turned into a bestseller based on feedback provided by several users and drawing from the author s own teaching experience the 4th edition adopts a new approach the presentation in this edition takes the reader on a scientific journey whose major landmarks comprise the different radar sub systems and components along the way the different relevant radar subsystems are analyzed and discussed in great level of detail understanding the radar signal types and their associated radar signal processing techniques are key to understating how radar systems function each chapter provides the necessary mathematical and analytical coverage required for a sound understanding of radar theory additionally dedicated matlab functions programs enhance the understanding of the theory and establish a means to perform radar system analysis and design trades the software provides users with numerous varieties of graphical outputs additionally a complete set of matlab code that generates all plot and graphs found within the pages of this textbook are also available all companion matlab code can be downloaded from the book s web page the 4th edition takes advantage of the new features offered by matlab 2021 release brings the text to a current state of the art incorporates much of the feedback received from users using this book as a text and from practicing engineers accordingly several chapters have been rewritten presents unique topics not found in other books maintains a comprehensive and exhaustive presentation restructures the presentation to be more convenient for course use provides a post course reference for engineering students as they enter the field offers a companion solutions manual for instructors the 4th edition will serve as a valuable tool to students and radar engineers by helping them better analyze and understand the many topics of radar systems this book is written primarily as a graduate level textbook although parts of it can be used as a senior level course a companion solutions manual has been developed for use by instructors

Global Analysis 1990-06-22 this book presents the first computer program automating the task of componential analysis of kinship vocabularies the book examines the program in relation to two basic problems the commonly occurring inconsistency of componential models and the huge number of alternative componential models

Activation Analysis 2019-09-16 dependence analysis may be considered to be the second edition of the author s 1988 book dependence analysis for supercomputing it is however a completely new work that subsumes the material of the 1988 publication this book is the third volume in the series loop transformations for restructuring compilers this series has been designed to provide a complete mathematical theory of transformations that can be used to automatically change a sequential program containing fortran like do loops into an equivalent parallel form in dependence analysis the author extends the model to a program consisting of do loops and assignment statements where the loops need not be sequentially nested and are allowed to have arbitrary strides in the context of such a program the author studies in detail dependence between statements of the program caused by program variables that are elements of arrays dependence analysis is directed toward graduate and undergraduate students and professional writers of restructuring compilers the prerequisite for the book consists of some knowledge of programming languages and familiarity with calculus and graph theory no knowledge of linear programming is required

Interrupted Time Series Analysis 2012-12-06 computational methods in power systems require significant inputs from diverse disciplines such as data base structures numerical analysis etc strategic decisions in sparsity exploitation and algorithm design influence large scale simulation and high speed computations selection of programming paradigm shapes the design its modularity and reusability this has a far reaching effect on software maintenance computational methods for large sparse power systems analysis an object oriented approach provides a unified object oriented oo treatment for power system analysis sparsity exploitation techniques in oo paradigm are emphasized to facilitate large scale and fast computing specific applications like large scale load flow short circuit analysis state estimation and optimal power flow are discussed within this framework a chapter on modeling and computational issues in power system dynamics is also included motivational examples and illustrations are included throughout the book a library of c classes provided along with this book has classes for transmission lines transformers substation etc a cd rom with c programs is also included it contains load flow short circuit analysis and network topology processor applications power system data is provided and systems up to 150 buses can be studied other special features this book is the first of its kind covering power system applications designed with an oo perspective chapters on object orientation for modeling of power system computations data structure large sparse linear system solver sparse qr decomposition in an oo framework are special features of this book

Panel Data Analysis 2018-05-19 this book offers a systematic presentation of up to date material scattered throughout the literature from the methodology point of view it reviews the basic theories and methods with many interesting problems in partial and ordinary differential equations differential geometry and mathematical physics as applications and provides the necessary preparation for almost all important aspects in contemporary studies all methods are illustrated by carefully chosen examples from mechanics physics engineering and geometry

An Introduction to Nonlinear Analysis and Fixed Point Theory 2022-03-29 statistical factor analysis and related methods theory andapplications in bridging the gap between the mathematical andstatistical theory of factor analysis this new work represents thefirst unified treatment of the theory and practice of factoranalysis and latent variable models it focuses on such areasas the classical principal components model and sample populationinference several extensions and modifications of principal components including q and three mode analysis and principal components in thecomplex domain maximum likelihood and weighted factor models factoridentification factor rotation and the estimation of factorscores the use of factor models in conjunction with various types ofdata including time series spatial data rank orders and nominalvariable applications of factor models to the estimation of functionalforms and to least squares of regression estimators

Radar Systems Analysis and Design Using MATLAB 2013-07-26 this book consists of nine papers covering a number of basic ideas concepts and methods of nonlinear analysis as well as some current research problems thus the reader is introduced to the fascinating theory around brouwer s fixed point theorem to granas theory of topological transversality and to some advanced techniques of critical point theory and fixed point theory other topics include discontinuous differential equations new results of metric fixed point theory robust tracker design problems for various classes of nonlinear systems and periodic solutions in computer virus propagation models

Componential Analysis of Kinship Terminology 2007-08-26 this book demonstrates the influence of geometry on the qualitative behaviour of solutions of quasilinear pdes on riemannian manifolds motivated by examples arising among others from the theory of submanifolds the authors study classes of coercive elliptic differential inequalities on domains of a manifold m with very general nonlinearities depending on the variable x on the solution u and on its gradient the book highlights the mean curvature operator and its variants and investigates the validity of strong maximum principles compact support principles and liouville type theorems in particular it identifies sharp thresholds involving curvatures or volume growth of geodesic balls in m to guarantee the above properties under appropriate keller osserman type conditions which are investigated in detail throughout the book and discusses the geometric reasons behind the existence of such thresholds further the book also provides a unified review of recent results in the literature and creates a bridge with geometry by studying the validity of weak

and strong maximum principles at infinity in the spirit of omori yau s hessian and laplacian principles and subsequent improvements

Dependence Analysis 2002 this book is a thorough and self contained treatise of martingales as a tool in stochastic analysis stochastic integrals and stochastic differential equations the book is clearly written and details of proofs are worked out

Computational Methods for Large Sparse Power Systems Analysis 1986 electromagnetic analysis and condition monitoring of synchronous generators discover an insightful and complete overview of electromagnetic analysis and fault diagnosis in large synchronous generators in electromagnetic analysis and condition monitoring of synchronous generators a team of distinguished engineers delivers a comprehensive review of the electromagnetic analysis and fault diagnosis of synchronous generators beginning with an introduction to several types of synchronous machine structures the authors move on to the most common faults found in synchronous generators and their impacts on performance the book includes coverage of different modeling tools including the finite element method winding function and magnetic equivalent circuit as well as various types of health monitoring systems focusing on the magnetic field voltage current shaft flux and vibration finally electromagnetic analysis and condition monitoring of synchronous generators covers signal processing tools that can help identify hidden patterns caused by faults and machine learning tools enabling automated condition monitoring the book also includes a thorough introduction to condition monitoring in electric machines and its importance to synchronous generators comprehensive explorations of the classification of synchronous generators including armature arrangement machine construction and applications practical discussions of different types of electrical and mechanical faults in synchronous generators including short circuit faults eccentricity faults misalignment core related faults and broken damper bar faults in depth examinations of the modeling of healthy and faulty synchronous generators including analytical and numerical methods perfect for engineers working in electrical machine analysis maintenance and fault detection electromagnetic analysis and condition monitoring of synchronous generators is also an indispensable resource for professors and students in electrical power engineering

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