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TEXTBOOK OF TENSOR CALCULUS AND DIFFERENTIAL GEOMETRY 2011-12-23

primarily intended for the undergraduate and postgraduate students of mathematics this textbook covers both geometry and tensor in a single volume this book aims to provide a conceptual exposition of the fundamental results in the theory of tensors it also illustrates the applications of tensors to differential geometry mechanics and relativity organized in ten chapters it provides the origin and nature of the tensor along with the scope of the tensor calculus besides this it also discusses n dimensional riemannian space characteristic peculiarity of riemannian space intrinsic property of surfaces and properties and transformation of christoffel s symbols besides the students of mathematics this book will be equally useful for the postgraduate students of physics key features contains 250 worked out examples includes more than 350 unsolved problems gives thorough foundation in tensors

Continuum Mechanics 2022-06-02

this book has been designed to introduce the fundamental concepts of continuum mechanics a unique feature of the book is that each chapter has been presented with different types of solved problems that are explained in a simple way this book also contains a wide variety of exercises which are intended to be an important part of the text note t f does not sell or distribute the hardback in india pakistan nepal bhutan bangladesh and sri lanka

A textbook of mechanics 2017

designed to meet requirements of undergraduate and postgraduate courses in mathematics physics and engineering this book covers all the standard topics in detail the illustrated examples are solved by classical analytic procedure theories as well as proofs of theorems are portrayed in a lucid manner

Integral Equations and Calculus of Variations 2020-01-30

soil harbours a wide range of microorganisms with biotic potentials which can be explored for social benefits the book frontiers in soil and environmental microbiology comprises an overview of the complex inter relationship between beneficial soil microbes and crop plants and highlights the potential for utilisation to enhance crop productivity bioremediation and soil health the book focusses on important areas of research such as biocide production pesticide degradation and detoxification microbial decay processes remediation of soils contaminated with toxic metals industrial wastes and hydrocarbon pollutants features presents the state of the art of microbial research in environmental and soil microbiology discusses an integrated and systematic compilation of microbes in the soil environment and its role in agriculture and plant growth and productivity elucidates microbial application in environmental remediation explores advanced genomics topics for uncultivable microbes of soil

Frontiers in Soil and Environmental Microbiology 2020-03-03

the principal aim of analysis of tensors is to investigate those relations which remain valid when we change from one coordinate system to another this book on tensors requires only a knowledge of elementary calculus differential equations and classical mechanics as pre requisites it provides the readers with all the information about the tensors along with the derivation of all the tensorial relations equations in a simple manner the book also deals in detail with topics of importance to the study of special and general relativity and the geometry of differentiable manifolds with a crystal clear exposition the concepts dealt within the book are well supported by a number of solved examples a carefully selected set of unsolved problems is also given at the end of each chapter and the answers and hints for the solution of these problems are given at the end of the book the applications of tensors to the fields of differential geometry relativity cosmology and electromagnetism is another attraction of the present book this book is intended to serve as text for postgraduate students of mathematics physics and engineering it is ideally suited for both students and teachers who are engaged in research in general theory of relativity and differential geometry

TENSORS 2015-05-21

this book is about differential geometry of space curves and surfaces the formulation and presentation are largely based on a tensor calculus approach it can be used as part of a course on tensor calculus as well as a textbook or a reference for an intermediate level course on differential geometry of curves and surfaces the book is furnished with an index extensive sets of exercises and many cross references which are hyperlinked for the ebook users to facilitate linking related concepts and sections the book also contains a considerable number of 2d and 3d graphic illustrations to help the readers and users to visualize the ideas and understand the abstract concepts we also provided an introductory chapter where the main concepts and techniques needed to understand the offered materials of differential geometry are outlined to make the book fairly self contained and reduce the need for external references

Introduction to Differential Geometry of Space Curves and Surfaces 2022-09-14

this book offers a thorough overview of the most popular and researched meta heuristic optimization techniques and nature inspired algorithms their wide applicability makes them a hot research topic and an effi cient tool for the solution of complex optimization problems in various fi elds of sciences engineering and in numerous industries

Meta-heuristic Optimization Techniques 2022-01-19

the compliance of this book is helpful for academicians researchers students as well as other people seeking the relevant material in current trends of studies on the topic of environmental degradation

Environmental Degradation: Causes and Remediation Strategies 2020-03-10

vector analysis with applications discusses the theory of vector algebra vector differential and integral calculus with applications to various fields such as geometry mechanics physics and engineering the concept of vector analysis is explained lucidly with the geometric notions and physical motivations many new approaches and new problems have been incorporated to enable the readers understand the subject in a comprehensive and systematic manner numerous solved problems have been included in each chapter with sufficient number of exercises each concept is explained with geometric figures

Vector Analysis with Applications 2009

curves and surfaces are objects that everyone can see and many of the questions that can be asked about them are natural and easily understood differential geometry is concerned with the precise mathematical formulation of some of these questions while trying to answer them using calculus techniques the geometry of differentiable manifolds with structures is one of the most important branches of modern differential geometry this well written book discusses the theory of differential and riemannian manifolds to help students understand the basic structures and consequent developments while introducing concepts such as bundles exterior algebra and calculus lie group and its algebra and calculus riemannian geometry submanifolds and hypersurfaces almost complex manifolds etc enough care has been taken to provide necessary details which enable the reader to grasp them easily the material of this book has been successfully tried in classroom teaching the book is designed for the postgraduate students of mathematics it will also be useful to the researchers working in the field of differential geometry and its applications to general theory of relativity and cosmology and other applied areas key features provides basic concepts in an easy to understand style presents the subject in a natural way follows a coordinate free approach includes a large number of solved examples and illuminating illustrations gives notes and remarks at appropriate places

DIFFERENTIAL GEOMETRY OF MANIFOLDS 2012-09-03

the book focuses on the integration of intelligent communication systems control systems and devices related to all aspects of engineering and sciences it includes high quality research papers from the 3rd international conference iciccd 2018 organized by the department of electronics instrumentation and control engineering at the university of petroleum and energy studies dehradun on 21 22 december 2018 covering a range of recent advances in intelligent communication intelligent control and intelligent devices the book presents original research and findings as well as researchers and industrial practitioners practical development experiences of

Intelligent Communication, Control and Devices 2019-08-28

the book covers the new ugc syllabus of applied mathematics physics and mechanics hons and m sc syllabus for all indian universities students appearing for their net slet gate examinations will find this book useful too contents preface bibliography mechanics of particles generalised coordinates variational principle lagrangian mechanic hamiltonian mechanics transformation theory hamilton jacobi theory reference frames rigid body motion central force field theory of oscillations relativistic mechanics etc

Mechanics:Newtonian Classical Relativistic Theory Problems Applications 2008-01-01

this book constitutes the refereed proceedings of the second international conference on smart trends in information technology and computer communications smartcom 2017 held in pune india in august 2017 the 38 revised papers presented were carefully reviewed and selected from 310 submissions the papers address issues on smart and secure systems smart and service computing smart data and it innovations

Smart Trends in Information Technology and Computer Communications 2018-08-20

this book features high quality research papers presented at the 2nd international conference on computational intelligence in pattern recognition cipr 2020 held at the institute of engineering and management kolkata west bengal india on 4 5 january 2020 it includes practical development experiences in various areas of data analysis and pattern recognition focusing on soft computing technologies clustering and classification algorithms rough set and fuzzy set theory evolutionary computations neural science and neural network systems image processing combinatorial pattern matching social network analysis audio and video data analysis data mining in dynamic environments bioinformatics hybrid computing big data analytics and deep learning it also provides innovative solutions to the challenges in these areas and discusses recent developments

Computational Intelligence in Pattern Recognition 2020-02-19

provides fundamental concepts about the theory application and various methods involving functional analysis for students teachers scientists and engineers divided into three parts it covers basic facts of linear algebra and real analysis normed spaces contraction mappings linear operators between normed spaces and fundamental results on these topics hilbert spaces and the representation of continuous linear function with applications in this self contained book all the concepts results and their consequences are motivated and illustrated by numerous examples in each chapter with carefully chosen exercises

Foundations of Functional Analysis 2002

this book features high quality research papers presented at the 3rd international conference on computational intelligence in pattern recognition cipr 2021 held at the institute of engineering and management kolkata west bengal india on 24 25 april 2021 it includes practical development experiences in various areas of data analysis and pattern recognition focusing on soft computing technologies clustering and classification algorithms rough set and fuzzy set theory evolutionary computations neural science and neural network systems image processing combinatorial pattern matching social network analysis audio and video data analysis data mining in dynamic environments bioinformatics hybrid computing big data analytics and deep learning it also provides innovative solutions to the challenges in these areas and discusses recent developments

Computational Intelligence in Pattern Recognition 2021-09-04

fundamental introduction of absolute differential calculus and for those interested in applications of tensor calculus to mathematical physics and engineering topics include spaces and tensors basic operations in riemannian space curvature of space more

Tensor Calculus 2012-04-26

this book is based on my previous book tensor calculus made simple where the development of tensor calculus concepts and techniques are continued at a higher level unlike the previous book which is largely based on a cartesian approach the formulation in the present book is based on a general coordinate system the book is furnished with an index as well as detailed sets of exercises to provide useful revision and practice to facilitate linking related concepts and sections cross referencing is used extensively throughout the book the book also contains a number of graphic illustrations to help the readers to visualize the ideas and understand the subtle concepts the book can be used as a text for an introductory or an intermediate level course on tensor calculus

Principles of Tensor Calculus 2022-08-23

this book is about tensor calculus the language and method used in presenting the ideas and techniques of tensor calculus make it very suitable for learning this subject by the beginners who have not been exposed previously to this elegant branch of mathematics considerable efforts have been made to reduce the dependency on foreign texts by summarizing the main concepts needed to make the book self contained the book also contains a significant number of high quality graphic illustrations to aid the readers and students in their effort to visualize the ideas and understand the abstract concepts furthermore illustrative techniques such as coloring and highlighting key terms by boldface fonts have been employed the book also contains extensive sets of exercises which cover most of the given materials these exercises are designed to provide thorough revisions of the supplied materials the solutions of all these exercises are provided in a companion book the book is also furnished with a rather detailed index and populated with hyperlinks for the ebook users to facilitate referencing and connecting related subjects and ideas

Tensor Calculus Made Simple 2022-08-23

a new edition of a classic textbook on complex analysis with an emphasis on translating visual intuition to rigorous proof

Complex Analysis 2018-08-23

this contributed volume sheds new light on waste management and the production of biofuels the authors share insights into microbial applications to meet the challenges of environmental pollution and the ever growing need for renewable energy they also explain how healthy and balanced ecosystems can be created and maintained using strategies ranging from oil biodegration and detoxification of azo dyes to biofouling in addition the book illustrates how the metabolic abilities of microorganisms can be used in microbial fuel cell technologies or for the production of biohydrogen it inspires young researchers and experienced scientists in the field of microbiology to explore the application of green biotechnology for bioremediation and the production of energy which will be one of the central topics for future generations

Microbial Applications Vol.1 2017-04-04

in the grip of lust raja karan vaghela abducts the beautiful roopsundari his prime minister madhav s wife fuelled by a desire for revenge madhav escapes to delhi and persuades sultan alauddin khilji to invade gujarat and destroy patan fort this unleashes a dramatic chain of events that forever ends rajput rule in gujarat heralding the dawn of a new age rich in psychological insight and imbued with a poetic vision karan ghelo tells the spellbinding tale of a man who tragically failed his land and its people

Karan Ghelo 2016-04-18

this textbook commences with a brief outline of development of real numbers their expression as infinite decimals and their representation by points along a line while the first part of the textbook is analytical the latter part deals with the geometrical applications of the subject numerous examples and exercises have been provided to support student s understanding this textbook has been designed to meet the requirements of undergraduate students of ba and bsc courses

Differential Calculus 2005-03

this text forms a bridge between courses in calculus and real analysis suitable for advanced undergraduates and graduate students it focuses on the construction of mathematical proofs 1996 edition

Introduction to Real Analysis 2014-04

this book offers essential information on geospatial technologies for water resource management and highlights the latest gis and geostatistics techniques as they relate to groundwater groundwater is inarguably india s single most important natural resource it is the foundation of millions of indian farmers livelihood security and the primary source of drinking water for a vast majority of indians in rural and urban areas the prospects of continued high rates of growth in the indian economy will to a great extent depend on how judiciously we can manage groundwater in the years to come over the past three decades india has emerged as by far the single largest consumer of groundwater in the world though groundwater has made the country self sufficient in terms of food we face a crisis of dwindling water tables and declining water quality deep drilling by tube wells which was once part of the solution to water shortages is now in danger of becoming part of the problem consequently we urgently need to focus our efforts on the sustainable and equitable management of groundwater addressing that need this book presents novel advances in and applications of rs gis and geostatistical techniques to the research community in a precise and straightforward manner

Geostatistics and Geospatial Technologies for Groundwater Resources in India 2021-02-26

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 2005-01-01

agroecological footprints are a unique and popular concept for sustainable food system measuring and keeping a tab on the agroecological footprints of various human activities has gained remarkable interest in the past decade from a range of human activities food production and agriculture are most essential as well as extremely dependent on the agroecosystems it is therefore crucial to understand the interaction of agroecosystem constituents with the extensive agricultural practices the environmental impact measured in terms of agroecological footprints for a healthy for the sustainable food system the editors critically examine the status of agroecological footprints and how it can be maintained within sustainable limits drawing upon research and examples from around the world the book is offering an up to date account and insight into how agroecology can be implemented as a solution in the form of eco friendly practices that would boost up the production curbs the environmental impacts improves the bio capacity and reduces the agroecological footprints it further discusses the changing status of the agroecological footprints and the growth of other footprint tools and types such as land water carbon nitrogen etc this book will be of interest to teachers researchers government planners climate change scientists capacity builders and policymakers also the book serves as additional reading material for undergraduate and graduate students of agriculture agroforestry agroecology soil science and environmental sciences national and international agricultural scientists policymakers will also find this to be useful to achieve the sustainable development goals

Agroecological Footprints Management for Sustainable Food System 2020-12-16

this book includes original unpublished contributions presented at the international conference on data analytics and management icdam 2020 held at jan wyzykowski university poland during june 2020 the book covers the topics in data analytics data management big data computational intelligence and communication networks the book presents innovative work by leading academics researchers and experts from industry which is useful for young researchers and students

Data Analytics and Management 2021-01-04

in this text which gradually develops the tools for formulating and manipulating the field equations of continuum mechanics the mathematics of tensor analysis is introduced in four well separated stages and the physical interpretation and application of vectors and tensors are stressed throughout this new edition contains more exercises in addition the author has appended a section on differential geometry

A Brief on Tensor Analysis 2012-10-31

this text opens with the theory of 2 person zero sum games 2 person non zero sum games and n person games at a level between non mathematical introductory books and technical mathematical game theory books includes introductory explanations of gaming and meta games includes numerous exercises anbd problems with solutions and over 30 illustrations 1986 edition

Zero Oil Thali (A Complete Meal Without Oil) 2005

this book starts from a set of common basic principles to establish the basic formalisms of all disciplines of fundamental physics including quantum field theory quantum mechanics statistical mechanics thermodynamics general relativity electromagnetism and classical mechanics instead of the traditional pedagogic way the author arranges the subjects and formalisms in a logical order i e all the formulas are derived from the formulas before them the formalisms are also kept self contained most mathematical tools are given in the appendices although this book covers all the disciplines of fundamental physics it contains only a single volume because the contents are kept concise and treated as an integrated entity which is consistent with the motto that simplicity is beauty unification is beauty and thus physics is beauty this can be used as an advanced textbook for graduate students it is also suitable for physicists who wish to have an overview of fundamental physics

Games, Theory and Applications 2012-12-13

this monograph is intended for an advanced undergraduate or graduate course as well as for researchers who want a compilation of developments in this rapidly growing field of operations research this is a sequel to our previous works multiple objective decision making methods and applications a state of the art survey no 164 of the lecture notes multiple attribute decision making methods and applications a state of the art survey no 186 of the lecture notes and group decision making under multiple criteria methods and applications no 281 of the lecture notes in this monograph the literature on methods of fuzzy multiple attribute decision making madm has been reviewed thoroughly and critically and classified systematically this study provides readers with a capsule look into the existing methods their characteristics and applicability to the analysis of fuzzy madm problems the basic concepts and algorithms from the classical madm methods have been used in the development of the fuzzy madm methods we give an overview of the classical madm in chapter ii chapter iii presents the basic concepts and mathematical operations of fuzzy set theory with simple numerical examples in a easy to read and easy to follow manner fuzzy madm methods basically consist of two phases 1 the aggregation of the performance scores with respect to all the attributes for each alternative and 2 the rank ordering of the alternatives according to the aggregated scores

Principles Of Physics: From Quantum Field Theory To Classical Mechanics (Second Edition) 2017-06-28

in the beginning of 1983 i came across a kaufmann s book introduction to the theory of fuzzy sets academic press new york 1975 this was my first acquaintance with the fuzzy set theory then i tried to introduce a new component which determines the degree of non membership in the definition of these

sets and to study the properties of the new objects so defined i defined ordinary operations as n u and over the new sets but i had began to look more seriously at them since april 1983 when i defined operators analogous to the modal operators of necessity and possibility the late george gargov 7 april 1947 9 november 1996 is the god father of the sets i introduced in fact he has invented the name intu itionistic fuzzy motivated by the fact that the law of the excluded middle does not hold for them presently intuitionistic fuzzy sets are an object of intensive research by scholars and scientists from over ten countries this book is the first attempt for a more comprehensive and complete report on the intuitionistic fuzzy set theory and its more relevant applications in a variety of diverse fields in this sense it has also a referential character

Fuzzy Multiple Attribute Decision Making 2012-12-06

the main goals of these lectures are to introduce concepts of numerical methods and introduce matlab in an engineering framework by this we do not mean that every problem is a real life engineering application but more that the engineering way of thinking is emphasized throughout the discussion

Intuitionistic Fuzzy Sets 2013-03-20

this book has been designed to introduce the fundamental concepts of continuum mechanics a unique feature of the book is that each chapter has been presented with different types of solved problems that are explained in a simple way this book also contains a wide variety of exercises which are intended to be an important part of the text note t f does not sell or distribute the hardback in india pakistan nepal bhutan bangladesh and sri lanka

MATLAB PROGRAMMING FOR ENGINEE 2017-02-07

describes the social history of a majority of indians the subalterns who move to urban india for survival

Continuum Mechanics 2022-06-01

Memories of Arrival 2022-01-15

Biochemistry 1960

Numerical Chemistry 1994

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