

and amino acid analysis * Mass spectral analysis of peptides and proteins * Posttranslational processing * High-sensitivity protein and peptide separations * Protein folding and NMR * Functional domain analysis * Protein design and engineering

[Numerical Solution of Elliptic Problems](#) Garrett Birkhoff 1984-01-01 A study of the art and science of solving elliptic problems numerically, with an emphasis on problems that have important scientific and engineering applications, and that are solvable at moderate cost on computing machines.

Kinetic Theory and Transport Phenomena Rodrigo Soto 2016-10-20 One of the questions about which humanity has often wondered is the arrow of time. Why does temporal evolution seem irreversible? That is, we often see objects break into pieces, but we never see them reconstitute spontaneously. This observation was first put into scientific terms by the so-called second law of thermodynamics: entropy never decreases. However, this law does not explain the origin of irreversibly; it only quantifies it. Kinetic theory gives a consistent explanation of irreversibility based on a statistical description of the motion of electrons, atoms, and molecules. The concepts of kinetic theory have been applied to innumerable situations including electronics, the production of particles in the early universe, the dynamics of astrophysical plasmas, quantum gases or the motion of small microorganisms in water, with excellent quantitative agreement.

This book presents the fundamentals of kinetic theory, considering classical paradigmatic examples as well as modern applications. It covers the most important systems where kinetic theory is applied, explaining their major features. The text is balanced between exploring the fundamental concepts of kinetic theory (irreversibility, transport processes, separation of time scales, conservations, coarse graining, distribution functions, etc.) and the results and predictions of the theory, where the relevant properties of different systems are computed.

Numerical Methods for Elliptic Problems with Singularities Z-C Li 1990-12-27 This book presents two kinds of numerical methods for solving elliptic boundary value problems with singularities. Part I gives the boundary methods which use analytic and singular expansions, and Part II the nonconforming methods combining finite element methods (FEM) (or finite difference methods (FDM)) and singular (or analytic) expansions. The advantage of these methods over the standard FEM and FDM is that they can cope with complicated geometrical boundaries and boundary conditions as well as singularity. Therefore, accurate numerical solutions near singularities can be obtained. The description of methods, error bounds, stability analysis and numerical experiments are provided for the typical problems with angular, interface and infinity singularities. However, the approximate techniques and coupling strategy given can be applied to solving other PDE and engineering problems with singularities as well. This book is derived from the author's Ph. D. thesis which won the 1987 best doctoral dissertation award given by the Canadian Applied Mathematics Society.

Contents:IntroductionPart I:Boundary Methods for Solving Laplace's Boundary Value Problems with SingularitiesA Complicated Problem Solved by Boundary MethodsBoundary Methods for Interface ProblemsPart II:The Nonconforming

Combination of the Ritz-Galerkin and Finite Element MethodsThe Nonforming Combinations for Infinite Domain ProblemsThe Nonconforming Combinations for Interface ProblemsThe Nonconforming Combination of the Ritz-Galerkin and Finite Difference MethodsReferences, Index Readership: Computer scientists, applied mathematicians and engineers. Keywords:Elliptic Problems;Finite Element Method;Finite Difference Method;Ritz-Galerkin Method;Boundary Element Method;Least Squares Method;Singularity Problems;Boundary Methods;Nonconforming Combinations

J. P. Verma 2016-03-31 A step-by-step approach to problem-solving techniques using SPSS® in the fields of sports science and physical education Featuring a clear and accessible approach to the methods, processes, and statistical techniques used in sports science and physical education, Sports Research with Analytical Solution using SPSS® emphasizes how to conduct and interpret a range of statistical analysis using SPSS. The book also addresses issues faced by research scholars in these fields by providing analytical solutions to various research problems without reliance on mathematical rigor. Logically arranged to cover both fundamental and advanced concepts, the book presents standard univariate and complex multivariate statistical techniques used in sports research such as multiple regression analysis, discriminant analysis, cluster analysis, and factor analysis. The author focuses on the treatment of various parametric and nonparametric statistical tests, which are shown through the techniques and interpretations of the SPSS outputs that are generated for each analysis. Sports Research with Analytical Solution using SPSS® also features: Numerous examples and case studies to provide readers with practical applications of the analytical concepts and techniques Plentiful screen shots throughout to help demonstrate the implementation of SPSS outputs Illustrative studies with simulated realistic data to clarify the analytical techniques covered End-of-chapter short answer questions, multiple choice questions, assignments, and practice exercises to help build a better understanding of the presented concepts A companion website with associated SPSS data files and PowerPoint® presentations for each chapter Sports Research with Analytical Solution using SPSS® is an excellent textbook for upper-undergraduate, graduate, and PhD-level courses in research methods, kinesiology, sports science, medicine, nutrition, health education, and physical education. The book is also an ideal reference for researchers and professionals in the fields of sports research, sports science, physical education, and social sciences, as well as anyone interested in learning SPSS.

Uniqueness and Nonuniqueness Criteria for Ordinary Differential Equations R P Agarwal 1993-03-31 This monograph aims to fill a void by making available a source book which first systematically describes all the available uniqueness and nonuniqueness criteria for ordinary differential equations, and compares and contrasts the merits of these criteria, and second, discusses open problems and offers some directions towards possible solutions. Contents:First Order Differential EquationsFirst Order Differential SystemsHigher Order Differential EquationsDifferential Equations in Abstract SpacesComplex Differential EquationsFunctional Differential EquationsImpulsive Differential EquationsDifferential Equations with HysteresisGeneralized Differential Equations Readership: Applied mathematicians, mathematicians and mathematical physicists.

Sports Research with Analytical Solution using SPSS