OMB No. 0544036197291

A Semi Analytical Method For Var And Credit Exposure Analysis

APPLICATION OF SEMI ANALYTICAL METHOD FOR SOLVING DIFFUSION EQUATION USING THE METHOD OF LINES A Semi-Analytical Method for Rotor Whirl Prediction (Rotordynamic Critical Speed Calculation) What does semianalytical mean? Semi Analytical Method for Solving Diffusion Equation Using The Method of Lines B, Noetinger: \"A semi analytical steady state method for solving transient Darcy flow \" Miquel Barcelona: \"Semi-analytical computation of heteroclinic connections between.. \" Lecture 21 Rrs inversion methods B: Semi-analytical Models to obtain IOPs (Part 1) SEMI ANALYTICAL ITERATIVE METHOD FOR SOLVING MICHAELIS MENTEN KINETIC ENZYME REACTION Qualitative Coding Tutorial: How To Code Qualitative Data For Analysis (4 Steps + Examples) How to self study pure math - a step-by-step guide How To Self-Study Math Terence Tao's Analysis I and Analysis II Book Review How to Read Books Effectively and Learn From Them - 6 Tips on BOOX Best MATH books for SELF-STUDY that will turn you into a Science Expert The fantastic four Statistics books 3 SUPER THICK Calculus Books for Self Study Surface Book 2 - Performance, Undervolting, Thermals One Math Book For Every Math Subject A Math Book For Every Person In The World Semi-Analytical Model for Fractures Initiated from Perforated Wells (Part 1 of 3) Applied Numerical Analysis Lab 9 Semi-analytical Rrs inversion Top 4 Mathematical Analysis Books Super Comprehensive Complex Variables Book CCSS Masterclass #5. Lecture 1: Models, analytical and semi-analytical methods Epic Math Book Speed Run Best Books for Mathematical Analysis/Advanced Calculus How to Read Hard Math Books This Book Will Make You A Calculus SUPERSTAR Real Analysis Book for Self Study

Accuracy Analysis of the Semi-analytical Method for Shape Sensitivity Analysis
A Semi-analytical Method for Jet Noise Prediction
A Semi-analytical Method for the Temporal Prediction of Chlorophyll in Clear Lake, Iowa Using Hyperion Imagery
A Semi-Analytical Method for Pricing and Hedging Continuously Sampled Arithmetic Average Rate Options
A Semi-analytical Method for Computing Third-body Effects on Earth's and Lunar Satellite Orbits
Numerical Analysis of Vibrations of Structures under Moving Inertial Load
A Hybrid Streamtube Simulator Using a Semi-analytical Method
A Semi-analytical Method of Factorial Rotation to Simple Structure
A Contribution to the Practical Solution of Aerotriangulation by Semi-analytical Method
A Semi-analytical Method for Heat Sweep Calculations in Fractured Reservoirs
A Semi-analytical Method for Steady-state Solution in HVDC Analysis
Development and Verification of New Semi-analytical Methods for the Analysis and Prediction of Gas Well Performance
A Semi-analytical Method of Factorial Rotation to Simple Structure, a Dissertation ... by Ledyard R. Tucker
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Ultrasonic Guided Waves in Solid Media

A Semi Analytical Method For Var And Credit Exposure Analysis *OMB No. 0544036197291 edited by*

SANTIAGO GALVAN

Accuracy Analysis of the Semi-analytical Method for Shape Sensitivity Analysis Springer Science & Business Media

An analytical approximation is developed for purely conductive heat transfer from impermeable blocks of rock to fluids sweeping past the rocks in fractures. The method was incorporated into a multi-phase fluid and heat flow simulator. Comparison with exact analytical solutions and with simulations using a multiple interacting continua approach shows very good accuracy, with no increase in computing time compared to porous medium simulations.

A Semi-analytical Method for Jet Noise Prediction John Wiley & Sons

Dealing with analytical and semi-analytical methods in engineering and sciences, this book draws upon results and methods of mathematical physics and systematically develops solution methods for ordinary and partial differential equations encountered in different engineering disciplines and sciences.

A Semi-analytical Method for the Temporal Prediction of Chlorophyll in Clear Lake, Iowa Using Hyperion Imagery

Xlibris Corporation

This book emphasizes in detail the applicability of the Optimal Homotopy Asymptotic Method to various engineering problems. It is a continuation of the book “Nonlinear Dynamical Systems in Engineering: Some Approximate Approaches”, published at Springer in 2011 and it contains a great amount of practical models from various fields of engineering such as classical and fluid mechanics, thermodynamics, nonlinear oscillations, electrical machines and so on. The main structure of the book consists of 5 chapters. The first chapter is introductory while the second chapter is devoted to a short history of the development of homotopy methods, including the basic ideas of the Optimal Homotopy Asymptotic Method. The last three chapters, from Chapter 3 to Chapter 5, are introducing three distinct alternatives of the Optimal Homotopy Asymptotic Method with illustrative applications to nonlinear dynamical systems. The third chapter deals with the first alternative of our approach with two iterations. Five applications are presented from fluid mechanics and nonlinear oscillations. The Chapter 4 presents the Optimal Homotopy Asymptotic Method with a single iteration and solving the linear equation on the first approximation. Here are treated 32 models from different fields of engineering such as fluid mechanics, thermodynamics, nonlinear damped and undamped oscillations, electrical machines and even from physics and biology. The last chapter is devoted to the Optimal Homotopy Asymptotic Method with a single iteration but without solving the equation in the first approximation.

A Semi-Analytical Method for Pricing and

Hedging Continuously Sampled Arithmetic Average Rate Options John Wiley & Sons
This book provides a comprehensive introduction to the analysis of functionally graded materials and structures. Functionally graded materials (FGMs), in which the volume fractions of two or more constituent materials are designed to vary continuously as a function of position along certain direction(s), have been developed and studied over the past three decades. The major advantage of FGMs is that no distinct internal boundaries exist, and failures from interfacial stress concentrations developed in conventional components can be avoided. The gradual change of material properties can be tailored to different applications and working environments. As these materials' range of application expands, new methodologies have to be developed to characterize them, and to design and analyze structural components made of them. Despite a number of existing papers on the analysis of functionally graded materials and structures, there is no single book that is devoted entirely to the analysis of functionally graded beams, plates and shells using different methods, e.g.,analytical or semi-analytical methods. Filling this gap in the literature, the book offers a valuable reference resource for senior undergraduates, graduate students, researchers, and engineers in this field. The results presented here can be used as a benchmark for checking the validity and accuracy of other numerical solutions. They can also be used directly in the design of functionally graded materials and structures.
A Semi-analytical Method for Computing Third-body Effects on Earth's and Lunar Satellite Orbits John Wiley & Sons
A semi-analytical method for determining the strain energy release rate due to a prescribed interface crack in an adhesively-bonded, single-lap composite joint subjected to axial tension is presented. The field equations in terms of displacements within the joint are formulated by using first-order shear deformable, laminated plate theory together with kinematic relations and force equilibrium conditions. The stress distributions for the adherends and adhesive are determined after the appropriate boundary and loading conditions are applied and the equations for the field displacements are solved. Based on the adhesive stress distributions, the forces at the crack tip are obtained and the strain energy release rate of the crack is determined by using the virtual crack closure technique (VCCT). Additionally, the test specimen geometry from both the ASTM D3165 and D1002 test standards are utilized during the derivation of the field equations in order to correlate analytical models with future test results. The system of second-order differential field equations is solved to provide the adherend and adhesive stress response using the symbolic computation tool, Maple 9. Finite element analyses using J-integral as well as VCCT were performed to verify the developed analytical model. The finite element analyses were conducted using the commercial finite element analysis software ABAQUS. The results determined using the analytical method correlated well with the results from the finite element analyses.
Numerical Analysis of Vibrations of Structures under Moving Inertial Load Elsevier
Groundwater-surface water interaction is a key component of the hydrologic cycle. This interaction plays a key role in many environmental issues such as the impacts of land use and climate change on water availability and water quality. Modeling of local and regional groundwater-surface water interactions improves understanding of these environmental issues and assists in addressing them. Because of the physical and mathematical complexities of this interaction, numerical approaches are generally used to model water exchange between subsurface and surface domains. The efficiency, accuracy, and stability of mesh-based numerical models, however, depend upon the resolution of the underlying grid or mesh. Grid-free analytical methods can provide fast, accurate, continuous and differentiable solutions to groundwater-surface water interaction problems. These solutions exactly satisfy mass balance in the entire internal domain and may improve our understanding of groundwater-surface water interaction principles. However, to model this interaction, analytical approaches typically required simplifying, sometimes unrealistic, assumptions. They are typically used to implement linearized mathematical models in homogenous confined or semi-confined aquifers with geometrically regular domains. By benefiting from the strengths of both analytical and numerical approaches, grid-free semi-analytical methods may be able to address more challenging groundwater problems which have been out of reach of traditional analytical approaches, and/or are poorly simulated using mesh-based numerical methods. Here, novel 2-D and 3-D semi-analytical solutions for the simulation of mathematically and physically complex groundwater-surface water interaction problems are developed, assessed and applied. Those models are based upon the series solution method and analytic element method (AEM) and are intended to address groundwater-surface water interactions induced by pumping wells and/or the presence of surface water bodies in naturally complex stratified unconfined aquifers. Semi-analytical solutions are obtained using the least squares method, which is used to determine the unknown coefficients in the series expansion and the unknown strengths of analytic elements. The series and AEM solutions automatically satisfy the groundwater governing equation. Hence, the resulting solutions are exact over the entire domain except along boundaries and layer interfaces where boundary and continuity conditions are met with high precision. A robust iterative algorithm is used to implement a free boundary condition along the phreatic surface with a priori unknown location. This thesis addresses three general problem types never addressed within a semi-analytic framework. First, a steady-state free boundary semi-analytical series solutions model is developed to simulate 2-D saturated-unsaturated flow in geometrically complex stratified unconfined aquifers. The saturated-unsaturated flow is controlled by water exchange along the land surface (e.g., evapotranspiration and infiltration) and the presence of surface water bodies. The water table and capillary fringe are allowed to intersect stratigraphic interfaces. The capillary fringe zone, unsaturated zone, groundwater zone and their interactions are incorporated with a high degree of accuracy. This model is used to assess the influences of important factors on unsaturated flow behavior and the water table elevation. Second, a 3-D free boundary semi-analytical series solution model is developed to simulate groundwater-surface water interaction controlled by infiltration, seepage faces and surface water bodies along the land surface. This model can simulate the water exchange between groundwater and surface water in geometrically complex stratified phreatic (unconfined) aquifers. The a priori unknown phreatic surface will be obtained iteratively while the locations of seepage faces don't have to be known a priori (i.e., this is a constrained free boundary problem).
A Hybrid Streamtube Simulator Using a Semi-analytical Method Cambridge University Press
This paper studies the pricing and hedging of continuously sampled arithmetic average rate options. We derive a new

analytical approximate formula to price and hedge the arithmetic average rate options. The correction to the analytical approximate formula is governed by a Partial Differential Equation (PDE) with smooth coefficients and zero initial condition, enabling it to be evaluated accurately by a numerical method. Numerical experiments show that the error of our semi-analytical method (ie, analytical approximation with the correction) is of the order of 10^{-7} for the grid size used in this paper, and the CPU time required for the numerical computation is only one second for a short-tenor option and 22 seconds for a long-tenor option. The accuracy can be improved further by reducing the grid size in a trade-off with CPU time. Our method is more accurate than any other method reported in the literature and it is faster than other PDE methods. With the error well controlled, our results can be used as a benchmark to justify the error computed by other approximation methods, including Monte Carlo simulation. [This article is a revised version of an earlier one entitled quot;Arithmetic Asian options with continuous sampling.quot;].

A Semi-analytical Method of Factorial Rotation to Simple Structure Alpha Science Int'l Ltd.

Ultrasonic guided waves in solid media have become a critically important subject in nondestructive testing and structural health monitoring, as new faster, more sensitive, and more economical ways of looking at materials and structures have become possible. This book will lead to fresh creative ideas for use in new inspection procedures. Although the mathematics is sometimes sophisticated, the book can also be read by managers without detailed understanding of the concepts as it can be read from a 'black box' point of view. Overall, the material presented on wave mechanics - in particular, guided wave mechanics - establishes a framework for the creative data collection and signal processing needed to solve many problems using ultrasonic nondestructive evaluation and structural health monitoring. The book can be used as a reference in ultrasonic nondestructive evaluation by professionals and as a textbook for seniors and graduate students. This work extends the coverage of Rose's earlier book Ultrasonic Waves in Solid Media.

A Contribution to the Practical Solution of Aerotriangulation by Semi-analytical Method

BiblioGov

Moving inertial loads are applied to structures in civil engineering, robotics, and mechanical engineering. Some fundamental books exist, as well as thousands of research papers. Well known is the book by L. Frýba, Vibrations of Solids and Structures Under Moving Loads, which describes almost all problems concerning non-inertial loads. This book presents broad description of numerical tools successfully applied to structural dynamic analysis. Physically we deal with non-conservative systems. The discrete approach formulated with the use of the classical finite element method results in elemental matrices, which can be directly added to global structure matrices. A more general approach is carried out with the space-time finite element method. In such a case, a trajectory of the moving concentrated parameter in space and time can be simply defined. We consider structures described by pure hyperbolic differential equations such as strings and structures described by hyperbolic-parabolic differential equations such as beams and plates. More complex structures such as frames, grids, shells, and three-dimensional objects, can be treated with the use of the solutions given in this book.

A Semi-analytical Method for Heat Sweep Calculations in Fractured Reservoirs

Mathematical Methods In Nonlinear Heat Transfer

Robust coverage of semi-analytical and traditional numerical methods for power system simulation In Power System Simulation Using Semi-Analytical Methods, distinguished researcher Dr. Kai Sun delivers a comprehensive treatment of semi-analytical simulation and current semi-analytical methods for power systems. The book presents semi-analytical solutions on power system dynamics via mathematical tools, and covers parallel contingency analysis and simulations. The author offers an overview of power system simulation and contingency analysis supported by data, tables, illustrations, and case studies on realistic power systems and experiments. Readers will find open-source code in MATLAB along with examples for key algorithms introduced in the book. You'll also find: A thorough background on power system simulation, including models, numerical solution methods, and semi-analytical solution methods Comprehensive explorations of semi-analytical power system simulation via a variety of mathematical methods such as the Adomian decomposition, differential transformation, homotopy analysis and holomorphic embedding methods. Practical discussions of semi-analytical simulations for realistic large-scale power grids Fulsome treatments of parallel power system simulation Perfect for power engineers and applied mathematicians with an interest in high-performance simulation of power systems and other large-scale network systems, Power System Simulation Using Semi-Analytical Methods will also benefit researchers and postgraduate students studying power system engineering.

A Semi-analytical Method for Steady-state Solution in HVDC Analysis Springer Nature

The life time of mechanical components can be increased by the presence of compressive residual stresses. Inherent to most production processes, residual stresses play a critical role on the mechanical parts behaviour. The knowledge and mastering of residual stresses and linked processes are thus fundamental. The development of efficient numerical methods to predict these residual stresses will allow to save costly experiments and to study the influence of the main parameters. This PhD presents the development and application of semi analytical methods (SAM) to the modelling of mechanical processes of compressive residual stress generation. The SAMs, initially developed for the simulation of elasto-plastic contacts, have the advantage of significantly low computation time compared to classical numerical methods. This method is first used to simulate the low plasticity burnishing process, with a rolling loading. Then, it is used for the simulation of impacts, first unique and then repeated. The frictionless rolling contact between two elasto-plastic bodies is first studied. The influence of plasticity, of the hardening model (isotropic or kinematic), of the geometry of the bodies in contact (spheres or ellipsoids) and of the loading type (indentation or rolling) on the contact pressure and plastic strains are analysed. Impacts simulation is then addressed. The developed method is first validated numerically then confronted to experimentations. Three materials have been particularly studied: 316L, AA 7010 and Inconel 600. The impacts dimensions and the generated strains, measured by digital image correlation, are used to validate experimentally the method. The ultrasonic shotpeening process has been specifically studied. The description of the kinematics of the shots put in movement by a sonotrode in a closed peening chamber has first been studied. The use of analytical formulae for the estimation of the coefficients of restitution, during the numerous impacts between shots and with the chamber's walls, allowed refining the

calculation of the average impact velocity as a function of the process parameters. The SAM is the used to determine the plastic strain field induced by the impacts. At last a projection method is proposed to finally determine the residual stress field in thick or thin structures.

Development and Verification of New Semi-analytical Methods for the Analysis and Prediction of Gas Well Performance Springer

POWER SYSTEM SIMULATION USING SEMI-ANALYTICAL METHODS Robust coverage of semi-analytical and traditional numerical methods for power system simulation In Power System Simulation Using Semi-Analytical Methods, distinguished researcher Dr. Kai Sun delivers a comprehensive treatment of semi-analytical simulation and current semi-analytical methods for power systems. The book presents semi-analytical solutions on power system dynamics via mathematical tools, and covers parallel contingency analysis and simulations. The book offers an overview of power system simulation and contingency analysis supported by data, tables, illustrations, and case studies on realistic power systems and experiments. Readers will find open-source code in MATLAB along with examples for key algorithms introduced in the book. You'll also find: A thorough background on power system simulation, including models, numerical solution methods, and semi-analytical solution methods Comprehensive explorations of semi-analytical power system simulation via a variety of mathematical methods such as the Adomian decomposition, differential transformation, homotopy analysis and holomorphic embedding methods Practical discussions of semi-analytical simulations for realistic large-scale power grids Fulsome treatments of parallel power system simulation Perfect for power engineers and applied mathematicians with an interest in high-performance simulation of power systems and other large-scale network systems, Power System Simulation Using Semi-Analytical Methods will also benefit researchers and postgraduate students studying power system engineering.

A Semi-analytical Method of Factorial Rotation to Simple Structure, a Dissertation ... by Ledyard R. Tucker

ABSTRACT: Considering the large amounts of data that is collected everyday in various domains such as health care, financial services, astrophysics and many others, there is a pressing need to convert this information into knowledge. Machine learning and data mining are both concerned with achieving this goal in a scalable fashion. The main theme of my work has been to analyze and better understand prevalent classification techniques and paradigms which are an integral part of machine learning and data mining research, with an aim to reduce the hiatus between theory and practice.

A Semi-Analytical Method for Determining the Energy Release Rate of Cracks in Adhesively-Bonded Single-Lap Composite Joints

The last part of the research is to extend the proposed semi-analytical method for analyzing piezoelectric prismatic structures with non-homogeneous, and arbitrarily shaped cross-sections. The proposed eRKPM discretization is utilized to obtain the cross-sectional behavior and the electromechanical fields along the axial direction are determined analytically.

Comparison of Semi-analytical Method of Hill-Brown-Eckert with Gauss 10 Method for the Main Problem of Lunar Theory

Research over the past ten years has generated an increased interest in studying elastic structural instabilities as a useful response for smart applications rather than a failure. Buckling under axial compression is a type of structural instability that can be used for rapid geometric transformations (switching) and energy harvesting applications, if the deformations arising from buckling are properly controlled. Controlling transverse deformations due to buckling in slender elements usually needs external constraints/boundaries. Short thin-walled cylinders can experience several elastic buckling events under axial compression without additional constraints. However, predicting the post-buckling response in cylinders is very challenging, particularly far in the post-buckling regime since they are highly sensitivity to initial imperfections.The concept of cylinders with non-uniform stiffness distribution (NSD) was recently proposed to localize a cylinder's buckling events in targeted zones. This notion has been proven effective for controlling the number of elastic buckling events, the sequence at which they occur, and the regions experiencing buckling. However, this information is not enough to design NSD cylinders for smart applications, which requires being able to predict the actual applied force for each buckling event, the end shortening of the cylinder for the buckling event, the drop in force, the drop in strain energy, and the post-buckling stiffness of the cylinder.Here, a semi-analytical model has been developed to predict the elastic post-buckling response of NSD cylinders under compression. The developed semi-analytical model is based on three general steps:ÓØSeparate the NSD cylinder into parallel segments,ÓØSimplify and predict the response of each segment, andÓØIntegrate the response of individual segments.The first step in predicting the elastic post-buckling response of a cylindrical segment was to simplify its geometry into a cylindrical panel with uniform thickness. Linear springs are connected to the top and bottom of the uniform cylinder to match the stiffness of the simplified segment to the actual one. Based on classical shell theory, the elastic post-buckling response of a cylindrical panel is solved as a boundary value differential equation using the pseudo-arclength method. Comparing the post-buckling response of four cylinders from the proposed semi-analytical model with the response of the same cylinders from the experiment and finite element analysis showed the effectiveness of the proposed model. Results from the proposed model predict well the axial deformation and force level corresponding to buckling events more accurately than the post-buckling stiffness.The response of cylindrical panels for a large variety of dimensions is needed to design NSD cylinders for targeted post-buckling behavior. Thus, the classic differential equation of the cylindrical panels under axial compression was solved independently of the material's cylinder radius and elastic modulus. These results allowed the development of design maps for several post-buckling responses such as axial strain and stresses corresponding to the first buckling event, force, and energy drops from the buckling event, the secondary (or post-buckling) stiffness of the panel, the radial deformation at the panel center, and the maximum von Mises stress in the panel. By using genetic programming, predictive equations were developed for each design parameter to relate it to the geometry of the panels.Three cylinders were designed using the developed design maps to validate the proposed approach. One NSD cylinder was designed to undergo several buckling events under compression at pre-defined end shortenings. A second NSD cylinder was designed to feature a post-buckling force-deformation response that plateaus at a constant force level. The third cylinder was designed to experience the same force drop at each buckling event and in identical axial end shortenings after the first event. Finite element analyses of the designed cylinders verified that using the proposed design procedure using the developed

design maps provides NSD cylinders with a post-buckling response that is very close to the desired one, and the ultimate design goal can be achieved by slight modifications to the geometry of the cylinder.This study advances the knowledge on the elastic buckling and post-buckling response of slender cylindrical shells under axial compression and provides an approach to analyze and design them for a desired far post-buckling response. The proposed framework, which combines the notion of decomposing NSD cylindrical segments into linear and nonlinear springs in series, a semi-analytical model for NSD equivalent panels, and design maps for several nonlinear responses provides insight for designing these elements for smart devices and structures relying on structural instabilities. This work expands the harnessing of elastic instabilities to the area of thin-shell buckling under compression, which has received less attention in comparison to other forms of structural instability.

Ultrasonic Guided Waves in Solid Media

Application of Semi-Analytical Methods for Nanofluid Flow and Heat Transfer applies semi-analytical methods to solve a range of engineering problems. After various methods are introduced, their application in nanofluid flow and heat transfer, magnetohydrodynamic flow, electrohydrodynamic flow and heat transfer, and nanofluid flow in porous media within several examples are explored. This is a valuable reference resource for materials scientists and engineers that will help familiarize them with a wide range of semi-analytical methods and how they are used in nanofluid flow and heat transfer. The book also includes case studies to illustrate how these methods are used in practice. Presents detailed information, giving readers a complete familiarity with governing equations where nanofluid is used as working fluid Provides the fundamentals of new analytical methods, applying them to applications of nanofluid flow and heat transfer in the presence of magnetic and electric field Gives a detailed overview of nanofluid motion in porous media

Analytical Methods in Engineering

Mathematical Methods In Nonlinear Heat TransferXlibris CorporationAdvanced Numerical and Semi-Analytical Methods for Differential EquationsJohn Wiley & Sons

Examines numerical and semi-analytical methods for differential equations that can be used for solving practical ODEs and PDEs This student-friendly book deals with various approaches for solving differential equations numerically or semi-analytically depending on the type of equations and offers simple example problems to help readers along. Featuring both traditional and recent methods, Advanced Numerical and Semi Analytical Methods for Differential Equations begins with a review of basic numerical methods. It then looks at Laplace, Fourier, and weighted residual methods for solving differential equations. A new challenging method of Boundary Characteristics Orthogonal Polynomials (BCOPs) is introduced next. The book then discusses Finite Difference Method (FDM), Finite Element Method (FEM), Finite Volume Method (FVM), and Boundary Element Method (BEM). Following that, analytical/semi analytic methods like Akbari Ganji's Method (AGM) and Exp-function are used to solve nonlinear differential equations. Nonlinear differential equations using semi-analytical methods are also addressed, namely Adomian Decomposition Method (ADM), Homotopy Perturbation Method (HPM), Variational Iteration Method (VIM), and Homotopy Analysis Method (HAM). Other topics covered include: emerging areas of research related to the solution of differential equations based on differential quadrature and wavelet approach; combined and hybrid methods for solving differential equations; as well as an overview of fractal differential equations. Further, uncertainty in term of intervals and fuzzy numbers have also been included, along with the interval finite element method. This book: Discusses various methods for solving linear and nonlinear ODEs and PDEs Covers basic numerical techniques for solving differential equations along with various discretization methods Investigates nonlinear differential equations using semi-analytical methods Examines differential equations in an uncertain environment Includes a new scenario in which uncertainty (in term of intervals and fuzzy numbers) has been included in differential equations Contains solved example problems, as well as some unsolved problems for self-validation of the topics covered Advanced Numerical and Semi Analytical Methods for Differential Equations is an excellent text for graduate as well as post graduate students and researchers studying various methods for solving differential equations, numerically and semi-analytically.

Semi-analytical Methods for Simulating the Groundwater-surface Water Interface

Semi-analytical Method for the Analysis and Design of Cylinders with Controllable Elastic Post-buckling Response