

Tfm Book Chapter 2

Multiscale modeling is becoming essential for accurate, rapid simulation in science and engineering. This book presents the results of three decades of research on multiscale modeling in process engineering from principles to application, and its generalization for different fields. This book considers the universality of meso-scale phenomena for the first time, and provides insight into the emerging discipline that unifies them, meso-science, as well as new perspectives for virtual process engineering. Multiscale modeling is applied in areas including: multiphase flow and fluid dynamics chemical, biochemical and process engineering mineral processing and metallurgical engineering energy and resources materials science and engineering Jinghai Li is Vice-President of the Chinese Academy of Sciences (CAS), a professor at the Institute of Process Engineering, CAS, and leader of the EMMS (Energy-minimizing multiscale) Group. Wei Ge, Wei Wang, Ning Yang and Junwu Wang are professors at the EMMS Group, part of the Institute of Process Engineering, CAS. Xinhua Liu, Limin Wang, Xianfeng He and Xiaowei Wang are associate professors at the EMMS Group, part of the Institute of Process Engineering, CAS. Mooson Kwauk is an emeritus director of the Institute of Process Engineering, CAS, and is an advisor to the EMMS Group.

Scripting gurus Jones and Hicks teach readers PowerShell from the ground up. They cover its underlying technologies, flexible scripting language, and enough of the .NET Framework to be effective in PowerShell scripting. (Computer Books)

This book provides an overview of automatic test pattern generation (ATPG) and introduces novel techniques to complement classical ATPG, based on Boolean Satisfiability (SAT). A fast and highly fault efficient SAT-based ATPG framework is presented which is also able to generate high-quality delay tests such as robust path delay tests, as well as tests with long propagation paths to detect small delay defects. The aim of the techniques and methodologies presented in this book is to improve SAT-based ATPG, in order to make it applicable in industrial practice. Readers will learn to improve the performance and robustness of the overall test generation process, so that the ATPG algorithm reliably will generate test patterns for most targeted faults in acceptable run time to meet the high fault coverage demands of industry. The techniques and improvements presented in this book provide the following advantages: Provides a comprehensive introduction to test generation and Boolean Satisfiability (SAT); Describes a highly fault efficient SAT-based ATPG framework; Introduces circuit-oriented SAT solving techniques, which make use of structural information and are able to accelerate the search process significantly; Provides SAT formulations for the prevalent delay faults models, in addition to the classical stuck-at fault model; Includes an industrial perspective on the state-of-the-art in the testing, along with SAT; two topics typically distinguished from each other.

As the leading choice in college accounting, Heintz & Parry's COLLEGE ACCOUNTING, 21E, combines a proven, step-by-step approach and excellent examples with a tightly integrated online homework tool that makes accounting understandable to every student, regardless of your accounting background or business experience. The Heintz & Parry program, well-known for its clarity, accuracy, and technology, focuses on the practical skills students need to transition from the classroom to the workplace. With even more practice opportunities and independent study resources than ever before, the 21E delivers the tools you need to succeed. This edition introduces accounting concepts using a proven step-by-step approach and inviting narrative style that focuses on the practical skills you'll need as you transition to tomorrow's workplace. The book begins with a basic foundation and simple service company examples before advancing to accounting within the more challenging merchandising and manufacturing environments. Engaging examples and functional learning features within the book's comprehensive approach reinforce the relevance of the skills you're learning and provide a clear, accurate presentation that's understandable even if you have no previous accounting experience or business background. Self-study aids and numerous practice opportunities allow you to check your understanding as you progress. To maximize your study time and help you efficiently complete your homework, CengageNOW provides interactive support, enhanced feedback, and a personalized learning path that assists you in the areas most challenging to you individually. Achieve your best in the classroom today and plan for success within the workplace tomorrow with the skills found in Heintz & Parry's COLLEGE ACCOUNTING, 21E. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The Sustainable Development Goals (SDGs) are a universal set of seventeen goals and 169 targets, with accompanying indicators, which were agreed by UN member states to frame their policy agendas for the fifteen-year period from 2015 to 2030. Written by three authors who have been engaged in the development of the SDGs from the beginning, this book offers an insider view of the process and a unique entry into what will be seen as one of the most significant negotiations and global policy agendas of the twenty-first century. The book reviews how the SDGs were developed, what happened in key meetings and how this transformational agenda, which took more than three years to negotiate, came together in September 2015. It dissects and analyzes the meetings, organizations and individuals that played key roles in their development. It provides fascinating insights into the subtleties and challenges of high-level negotiation processes of governments and stakeholders, and into how the SDGs were debated, formulated and agreed. It is essential reading for all interested in the UN, sustainable development and the future of the planet and humankind.

This book is a topical review of venous disease providing an up-to-date view of management and current issues. It is aimed at professionals involved in the management of patients with venous disease, whether they be a vascular specialist, nurse or technologist, physicians with an interest in venous disease, as well as primary care doctors and nurses who wish to complement their knowledge of the area. Acknowledged experts, active in the field, have covered topics ranging from the history, epidemiology, signs and

symptoms, investigation and treatment of venous disease to issues of quality of life, complications and litigation, and setting up a clinical service. The treatment of deep vein thrombosis is discussed together with the controversial area of DVT and travel. Newer techniques of vein ablation, subfascial endoscopic perforator surgery (SEPS) and foam sclerotherapy are also covered. This book should find a place on the bookshelf as an exciting review of contemporary themes and complements traditional textbooks. Winner of a HIGHLY COMMENDED AWARD in the Surgery category of the 2007 BMA Medical Book Competition. The first edition published in 1999, was described as a "longed for addition to the literature", and as a text that "cannot be compared with any other book on vascular surgery" (Lancet 2000; 355: 1918). At the time it was different; a book to help busy clinicians sift through surgical research and use it to make sensible decisions for their clinical practice. The challenge for this second edition is to produce something better still. The new edition is larger and more comprehensive, thanks to valuable suggestions from colleagues and reviewers. The text is as accessible as possible, with short chapters, recommendations for management, comprehensive referencing and full colour illustration. It belongs on the shelf, or in the briefcase of everyone who has to treat patients with vascular disease.

With school improvement initiatives, quality trumps quantity every time. This book solves the growing problem of schools implementing too many improvement strategies at once instead of deep focus on the most critical few. B.R. Jones's method details: Selecting critical standards—Defining the skills your students most need now. Uncovering the essentials—Choosing your initiatives based on a deconstruction of the standards and targeted definitions of how they will enrich students. Critical formative analysis of students—Analyzing student work to measure the strategy's effectiveness. Critical learning teams—Collaborating with colleagues so everyone can make better decisions. The Ultimate Book on Group Policy Freshly updated to include Windows 7, Windows 8 and Windows Server 2012, Group Policy: Fundamentals, Security, and the Managed Desktop, Second Edition is the book for learning everything you need to know about Group Policy, no matter which version of Windows you use. Microsoft Group Policy MVP Jeremy Moskowitz covers it all—major Group Policy categories, what Windows 8 and Windows Server 2012 bring to the table, and smart ways to tackle tough desktop management problems. Topics include troubleshooting, security, scripting, using Windows PowerShell when necessary, and much more. Inside this book, you'll learn to: Master all Group Policy functions of Windows, including Windows XP through Windows 8 and Windows Server 2003 through Windows Server 2012 Enhance your Group Policy reach with the Group Policy Preferences, ADMX files, and additional add-ons Use every feature of the GPMC and become a top-notch administrator Troubleshoot Group Policy using tools, logs, Resource Kit utilities, Registry hacks, and third-party tools Manage printers, restrict hardware, and configure Internet Explorer Deploy software to your desktops, set up roaming profiles, and configure Offline Files for all your Windows clients—and manage it all with Group Policy settings Secure your desktops and servers with AppLocker, Windows Firewall with Advanced Security, and the Security Configuration Manager Download bonus chapters and: Script complex GPMC operations with PowerShell, including linking, backup, restore, permissions changes, and more Create a "change management" system with Advanced Group Policy Management (AGPM v4) Understand Windows Intune service and its relationship to Group Policy Coverage Includes: Updated GPMC New Windows 8 GPMC Features ADMX/ADML Files Group Policy Preferences Item-Level Targeting The Central Store AppLocker Fine-Grained Password Policy Offline Files Updates Inheritance Blocking Prioritization Linking Loopback Policy Processing Security Policy Processing Enforcing WMI Filters Third-Party Tools Cross-Forest Trusts Filters Commenting Searching Advanced Logging and Troubleshooting Advanced Auditing Controls Group Policy and VDI Security Configuration Manager Windows Intune

Among the features that make Noiseless Steganography: The Key to Covert Communications a first of its kind: The first to comprehensively cover Linguistic Steganography The first to comprehensively cover Graph Steganography The first to comprehensively cover Game Steganography Although the goal of steganography is to prevent adversaries from suspecting the existence of covert communications, most books on the subject present outdated steganography approaches that are detectable by human and/or machine examinations. These approaches often fail because they camouflage data as a detectable noise by altering digital images, audio files, text, etc. However, such alteration raises suspicion and makes the message discernible by detecting its noise. Addressing such shortcomings, Noiseless Steganography: The Key to Covert Communications introduces a novel Noiseless Steganography Paradigm (Nostega). Rather than hiding data in noise or producing noise, Nostega camouflages messages as well as their transmission in the form of unquestionable data in the generated steganographic cover. The book explains how to use Nostega to determine suitable domains capable of generating unsuspecting steganographic cover in which messages are embedded in the form of innocent data that is compatible with the chosen domain. It presents a number of Nostega-based methodologies, including but not limited to: A novel cover type that enables data to be hidden in plotted graphs A novel methodology that pursues popular games such as chess, checkers, crosswords, and dominoes to conceal messages Comprehensive coverage of linguistic steganography Several novel linguistic steganography methodologies based on Natural Language Processing and Computational Linguistic techniques such as: Education-Centric-Based, Summarization-Based, Natural Language Generation Based, Random-Series-Based, Email Headers Based, Automatic Joke Generation Based, List-Based, and Automatic Notes Generation Based The first book to provide comprehensive coverage of Linguistic Steganography, Graph Steganography, and Game Steganography, it discusses the implementation and steganalysis validation of ten Nostega-based methodologies. It describes how to establish covert channels by employing the selected domain to serve as justification for the interaction and delivery of the cover among the communicating parties. Instead of using contemporary steganography approaches to camouflage your data as noise that is assumed to look innocent, the text provides you with the tools to prevent your adversaries from suspecting the existence of covert communications altogether.

A digital elevation model (DEM) is a digital representation of ground surface topography or terrain. It is also widely known as a digital terrain model (DTM). A DEM can be represented as a raster (a grid of squares) or as a vector based triangular irregular network (TIN). DEMs are commonly built using remote sensing techniques, but they may also be built from land surveying. DEMs are used often in geographic information systems, and are the most common basis for digitally-produced relief maps. The terrain surface can be described as comprising of two different elements; random and systematic. The random (stochastic) elements are the continuous surfaces with continuously varying relief. It would take an endless number of points to describe exactly the random terrain shapes, but these can be described in practice with a network of point. It is usual to use a network that creates sloping triangles or regular quadrants. This book examines how the methods and data sources used to generate DEMs and calculate land surface parameters have changed over the past 25 years. The primary goal is to describe the state-of-the-art for a typical digital terrain modeling workflow that starts with data capture, continues with data preprocessing and DEM generation, and concludes with the calculation of one or more primary and secondary land surface parameters. Taken as a whole, this book covers the basic theory behind the methods, the instrumentation, analysis and interpretation that are embedded in the modern digital terrain modeling workflow, the strengths and weaknesses of the various methods that the terrain analyst must choose among, typical applications of the results emanating from these terrain modeling workflows, and future directions. This book is intended for researchers and practitioners who wish to use DEMs, land surface parameters, land surface objects and landforms in environmental projects. The book will also be valuable as a reference text for environmental scientists who are specialists in related fields and wish to integrate these kinds of digital terrain workflows and outputs into their own specialized work environments.

This book is for engineers and students to solve issues concerning the fluidized bed systems. It presents an analysis that focuses directly on the problem of predicting the fluid dynamic behavior which empirical data is limited or unavailable. The second objective is to provide a treatment of computational fluidization dynamics that is readily accessible to the non-specialist. The approach adopted in this book, starting with the formulation of predictive expressions for the basic conservation equations for mass and momentum using kinetic theory of granular flow. The analyses presented in this book represent a body of simulations and experiments research that has appeared in numerous publications over the last 20 years. This material helps to form the basis for university course modules in engineering and applied science at undergraduate and graduate level, as well as focused, post-experienced courses for the process, and allied industries.

FIRST PRIZE Winner in the Oncology category of the 2010 BMA Medical Book Competition. Intensive research over the last fifteen years has yielded a vast expansion in our understanding of the role of inheritance and genetics in a variety of cancers. Several inherited conditions have been identified which result in a high risk of various cancers; some of these were previously recognized, but the genetic basis underlying them has now been elucidated. This knowledge is now entering the sphere of routine clinical care.

Surgeons, gastroenterologists, gynaecologists, oncologists, endocrinologists and many others need an awareness of these disorders, an understanding of genetic testing and when it is indicated, and how to manage patients with inherited cancer predisposition and their families. This book covers the basic concepts of cancer genetics. The common inherited cancer syndromes are each dealt with in greater depth, with the current management outlined. This book is aimed at all clinicians who may encounter these conditions in their practice. It aims to facilitate identification of high-risk individuals and families, to inform interaction with geneticists and other subspecialists, to provide a basis for patient management and to stimulate interest in these fascinating conditions.

Simplicity is an underrated virtue; where information is vital, it should be possible to put it across in a way that is easy to understand and remember. Epilepsy is a common condition which has been recognised since the beginning of history, and as the opportunities for diagnosis and effective treatment have increased, it becomes more important that health professionals have a working knowledge of how epilepsy interacts with their own area of expertise. The interactions between all aspects of medicine and epilepsy should motivate all to do their best to learn about management of all stages of the disease, from first seizure through to status epilepticus. This is recognition that providing a diagnosis of epilepsy has more than medical implications, and in fact it is safe to say that there are few aspects of modern life that will remain untouched by such a diagnosis and consequent treatment. At some point, discussions will be required around the issues of fertility, job prospects, driving issues, family safety, childcare, travel, life insurance, diet, and sports participation. This book, has been produced by Dr Becky O'Dwyer and Dr John Paul Leach, recognised experts in epilepsy from opposite sides of the Atlantic. They have tried to make the key concepts of epilepsy's cause, prognosis and treatment accessible to all in this compact format, providing information for clinicians and permitting informed choice for patients and their families.

Step-by-step tutorial to master current design techniques for wireless communication systems The Third Edition of Radio System Design for Telecommunications brings this highly acclaimed book fully up to date with the latest technological advances and new applications. At the same time, the hallmarks of the previous editions, including the text's popular tutorial presentation, have been retained. Readers therefore get all the tools and guidance they need to master an essential set of current design techniques for radio systems that operate at frequencies of 3 MHz to 100 GHz. Using simple mathematics, the author illustrates design concepts and applications. The book's logical organization, beginning with a discussion of radio propagation problems, enables readers to progressively develop the skills and knowledge needed to advance in the text. Topics that are new to the Third Edition include: Chapter devoted to wireless LANs (WLANs) as detailed in IEEE 802.11 Subsections covering IEEE 802.15, 802.16, 802.20, and the wireless metropolitan area network (WMAN) WiFi, WiMax, and UWB applications that have recently experienced explosive growth Broadband radio in telecommunications, as well as

offset frequency division multiplex (OFDM), a new technique for transmitting information in an interference environment The use of very small aperture satellite terminal (VSAT) systems as an economical alternative to public switched telecommunication networks (PSTN) Review questions and problems at the end of each chapter engage readers' newfound skills and knowledge and help them assess whether they are ready to progress to the next chapter. References are provided for readers who want to investigate particular topics in greater depth. Students in wireless telecommunications will find the book's tutorial style ideal for learning all the ins and outs of radio system design, whereas professionals in the industry will want to refer to the Third Edition for its clear explanations of the latest technology and applications.

Stay on top of the latest scientific and therapeutic advances with the new edition of Leibel and Phillips Textbook of Radiation Oncology. Dr. Theodore L. Phillips, in collaboration with two new authors, Drs. Richard Hoppe and Mack Roach, offers a multidisciplinary look at the presentation of uniform treatment philosophies for cancer patients emphasizing the "treat for cure" philosophy. You can also explore the implementation of new imaging techniques to locate and treat tumors, new molecularly targeted therapies, and new types of treatment delivery. Supplement your reading with online access to the complete contents of the book, a downloadable image library, and more at expertconsult.com. Gather step-by-step techniques for assessing and implementing radiotherapeutic options with this comprehensive, full-color, clinically oriented text. Review the basic principles behind the selection and application of radiation as a treatment modality, including radiobiology, radiation physics, immobilization and simulation, high dose rate, and more. Use new imaging techniques to anatomically locate tumors before and during treatment. Apply multidisciplinary treatments with advice from experts in medical, surgical, and radiation oncology. Explore new treatment options such as proton therapy, which can facilitate precise tumor-targeting and reduce damage to healthy tissue and organs. Stay on the edge of technology with new chapters on IGRT, DNA damage and repair, and molecularly targeted therapies.

This book has been written to address the increasing number of Operations Research and Management Science problems (that is, applications) that involve the explicit consideration of time and of gaming among multiple agents. It is a book that will be used both as a textbook and as a reference and guide by those whose work involves the theoretical aspects of dynamic optimization and differential games.

Amid climatic changes linked to global warming, ongoing changes in land-use patterns, and growing international concern with the environment it is increasingly important to understand the potential impact of these changes on the environment. Rainfall-runoff modeling is an important predictor of that impact. This book introduces rainfall-runoff models that have been developed over the past 24-30 years, giving examples of their practical applications. It provides a summary of available techniques for rainfall modeling based upon the most recent research, but in a way that serves as a primer for the subject. Provides an overview of how catchment rainfall-runoff systems work A history of rainfall-runoff models Examples of models can be downloaded over the Internet Looks at uncertainty in model prediction

This concise, straightforward guide provides an all-purpose introduction to writing and preparing papers, reports, articles, and books with TEX. Scientists, engineers, mathematicians, and technical staff will discover how easy it is to clearly and quickly perform all the necessary tasks required to prepare equations and text. The first half of the book is devoted to explaining how to typeset equations, while the remainder of the book addresses advanced topics and more general text processing and page formatting topics. A TEX Primer for Scientists will save you time and reduce frustration while increasing the flexibility, quality, and efficiency of your documents.

"Introduction to Product/Service-System Design" contains a collection of practical examples demonstrating how to design a PSS in industry. These recent examples are the results of applying various theories developed in different countries and therefore accommodating diverse cultural differences. Providing a useful overall guide to the state of the art in theory and practice, each chapter covers the cutting edge of a different methodology or practice. The book's focus on design is also evident in the discussion of how to anticipate and utilize the various dynamics within each dimension. "Introduction to Product/Service-System Design" will help improve working processes and inspire creative thinking for the wide range of people involved in designing a PSS: designers, marketing professionals, sales staff, production engineers, and service engineers. It can also serve as a reference book for university students on advanced courses.

This new edition adds several new chapters and is thoroughly updated to include data on new topics such as hydraulic fracturing, CO2 sequestration, sustainable groundwater management, and more. Providing a complete treatment of the theory and practice of groundwater engineering, this new handbook also presents a current and detailed review of how to model the flow of water and the transport of contaminants both in the unsaturated and saturated zones, covers the protection of groundwater, and the remediation of contaminated groundwater.

This book explores multimedia applications that emerged from computer vision and machine learning technologies. These state-of-the-art applications include MPEG-7, interactive multimedia retrieval, multimodal fusion, annotation, and database re-ranking. The application-oriented approach maximizes reader understanding of this complex field. Established researchers explain the latest developments in multimedia database technology and offer a glimpse of future technologies. The authors emphasize the crucial role of innovation, inspiring users to develop new applications in multimedia technologies such as mobile media, large scale image and video databases, news video and film, forensic image databases and gesture databases. With a strong focus on industrial applications along with an overview of research topics, Multimedia Database Retrieval: Technology and Applications is an indispensable guide for computer scientists, engineers and practitioners involved in the development and use of multimedia systems. It also serves as a secondary text or reference for advanced-level students interested in multimedia technologies.

Winner of a COMMENDED AWARD in the Urology category of the 2008 BMA Medical Book Competition. Following on from the huge success of the first edition, this is the second edition which will not only update all previous chapters but also, it will have many additional chapters to add value over and above the first edition. The need for dialysis access surgery is growing rapidly as the population of patients with endstage renal failure expands. This book is aimed at those healthcare professionals involved in the care of patients undergoing dialysis. Vascular Access Simplified gives a comprehensive review of all aspects of adult dialysis access with a specific emphasis on haemodialysis. The text highlights some of the difference in practices of

physicians in Europe and the USA. The contributors are allied professionals, physicians, radiologists, vascular and transplant surgeons who have a specific interest and are all committed to improving the quality of dialysis access.

Textbook of Family Medicine, 3/e has been thoroughly revised and updated as per the requirement of general practitioners. Chapters contributed from a number of national and international experts in their respective fields makes this an authoritative text. The chapters have been thoroughly revised not only to incorporate symptomatic approach and management at primary care level but also the advanced treatment options available in tertiary care centres. With its contemporary approach and lucid presentation, the text would be of immense value to the general practitioners as well as students pursuing courses in Family medicine.

For undergraduate courses in Behavior Modification or Behavior Therapy This book presents a comprehensive, practical presentation of both the principles of behavior modification and guidelines for their application. Throughout their separate experiences in teaching behavior modification over the past 39 years, both Garry Martin and Joseph Pear's goals have remained the same: to teach people about the principles of behavior modification and how to apply them effectively to their everyday concerns from helping children learn life's necessary skills to solving some of their own personal behavior problems. Through eight editions their text has remained successful and effective because it addresses the needs of two central audiences: college and university students taking courses in behavior modification and its related areas; and students or practitioners of various helping professions (such as clinical psychology, counseling, medicine, etc.) who are concerned directly with enhancing various forms of behavioral development. Assuming no prior knowledge of behavior modification or psychology, this text facilitates understanding of the principles of behavior modification and helps readers to successfully implement behavior modification programs.

It is important to understand that when a marriage is over, it is not the time for retribution and revenge, but rather the opportunity to strike out for a new life while providing for and protecting the children. This book — the first comprehensive treatment of family mediation for Chinese families — provides the knowledge and skills to achieve that objectives. Throughout the book the author discusses practical techniques for resolving family conflicts and creating parenting plans. The model described enables mediators — who may be social work, psychology or legal professionals — to negotiate the issues in dispute so as to arrive at a settlement that is mutually acceptable, and is fair and equitable to the families. Divorcing couples should also read the book because it will help them with ideas and principles leading towards amicable solutions.

"An old-fashioned tale of tall talk, high ideals, and irresistible appeal . . . You will not read a historical thriller like this all year . . . [Egan] is a master storyteller." —Boston Globe "Egan has a gift for sweeping narrative . . . and he has a journalist's eye for the telltale detail . . . This is masterly work." — New York Times Book Review In this exciting and illuminating work, National Book Award winner Timothy Egan delivers a story, both rollicking and haunting, of one of the most famous Irish Americans of all time. A dashing young orator during the Great Hunger of the 1840s, Thomas Francis Meagher led a failed uprising against British rule, for which he was banished to a Tasmanian prison colony for life. But two years later he was "back from the dead" and in New York, instantly the most famous Irishman in America. Meagher's rebirth included his leading the newly formed Irish Brigade in many of the fiercest battles of the Civil War. Afterward, he tried to build a new Ireland in the wild west of Montana—a quixotic adventure that ended in the great mystery of his disappearance, which Egan resolves convincingly at last. "This is marvelous stuff. Thomas F. Meagher strides onto Egan's beautifully wrought pages just as he lived—powerfully larger than life. A fascinating account of an extraordinary life." — Daniel James Brown, author of *The Boys in the Boat* "Thomas Meagher's is an irresistible story, irresistibly retold by the virtuosic Timothy Egan . . . A gripping, novelistic page-turner." — Wall Street Journal

This book addresses the linear and nonlinear two-phase stability of the one-dimensional Two-Fluid Model (TFM) material waves and the numerical methods used to solve it. The TFM fluid dynamic stability is a problem that remains open since its inception more than forty years ago. The difficulty is formidable because it involves the combined challenges of two-phase topological structure and turbulence, both nonlinear phenomena. The one dimensional approach permits the separation of the former from the latter. The authors first analyze the kinematic and Kelvin-Helmholtz instabilities with the simplified one-dimensional Fixed-Flux Model (FFM). They then analyze the density wave instability with the well-known Drift-Flux Model. They demonstrate that the Fixed-Flux and Drift-Flux assumptions are two complementary TFM simplifications that address two-phase local and global linear instabilities separately. Furthermore, they demonstrate with a well-posed FFM and a DFM two cases of nonlinear two-phase behavior that are chaotic and Lyapunov stable. On the practical side, they also assess the regularization of an ill-posed one-dimensional TFM industrial code. Furthermore, the one-dimensional stability analyses are applied to obtain well-posed CFD TFMs that are either stable (RANS) or Lyapunov stable (URANS), with the focus on numerical convergence.

Topological UML Modeling: An Improved Approach for Domain Modeling and Software Development presents a specification for Topological UML® that combines the formalism of the Topological Functioning Model (TFM) mathematical topology with a specified software analysis and design method. The analysis of problem domain and design of desired solutions within software development processes has a major impact on the achieved result – developed software. While there are many tools and different techniques to create detailed specifications of the solution, the proper analysis of problem domain functioning is ignored or covered insufficiently. The design of object-oriented software has been led for many years by the Unified Modeling Language (UML®), an approved industry standard modeling notation for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system, and this comprehensive book shines new light on the many advances in the field. Presents an approach to formally define, analyze, and verify functionality of existing processes and desired processes to track incomplete or incorrect functional requirements Describes the path from functional and nonfunctional requirements specification to software design with step-by-step creation and transformation of diagrams and models with very early capturing of security requirements for software systems. Defines all modeling constructs as extensions to UML®, thus creating a new UML® profile which can be implemented in existing UML® modeling tools and toolsets

This volume provides general information on programs, policies, procedures, and fiscal record keeping and reporting for federally funded student financial aid programs under the Higher Education Act of 1965, Title IV. Chapter 1 provides an overview of Title IV programs. Chapter 2 discusses general institutional responsibilities related to managing Title IV programs. Chapter 3 addresses key fiscal procedures unique to managing Title IV campus-based programs. Chapter 4 provides a comprehensive discussion of obtaining, managing, and returning Title IV funds.

Chapter 5 describes specific accounting procedures used to manage Title IV program funds. Chapter 6 addresses Title IV reporting requirements. Appendixes supplementing the main chapters include: a comprehensive glossary of terms related to Title IV accounting, record keeping, and reporting requirements; a list of commonly used acronyms; a list of published information sources that supplement and support the book's information; information for fiscal officers on who to contact for technical assistance; detailed descriptions of each Title IV program; and a primer on accounting for non-Title IV specialists, designed to help novice fiscal officers understand how basic accounting principles apply in managing Title IV program funds.

Whether a student, an instructor, a researcher, or just someone interested in understanding the roots of sociology and our social world, *The Cambridge Handbook of Sociology, Volume 2* is for you. This second volume of the Handbook covers specialties within sociology and interdisciplinary studies that relate to sociology. It includes perspectives on race, class, feminist theories, special topics (e.g. the sociology of nonhuman animals, quality of life/social indicators research, the sociology of risk, the sociology of disaster, the sociology of mental health, sociobiology, the sociology of science and technology, the sociology of violence, environmental justice, and the sociology of food), the sociology of the self, the sociology of the life course, culture and behavior, sociology's impact on society, and related fields (e.g. criminology, criminal justice studies, social work, social psychology, sociology of translation and translation studies, and women and gender studies). Each essay includes a discussion of how the respective subfield contributes to the overall discipline and to society. Written by some of the most respected scholars, teachers, and public sociologists in the world, the essays are highly readable and authoritative.

This book highlights the latest advances and trends in advanced signal processing (such as wavelet theory, time-frequency analysis, empirical mode decomposition, compressive sensing and sparse representation, and stochastic resonance) for structural health monitoring (SHM). Its primary focus is on the utilization of advanced signal processing techniques to help monitor the health status of critical structures and machines encountered in our daily lives: wind turbines, gas turbines, machine tools, etc. As such, it offers a key reference guide for researchers, graduate students, and industry professionals who work in the field of SHM.

"This book displays how to effectively map and respond to the real-world challenges and purposes which software must solve, covering domains such as mechatronic, embedded and high risk systems, where failure could cost human lives"--Provided by publisher.

Gold and noble metals have been attractive to humans from ancient times because of their beautiful features. In modern society, noble metals, especially gold, play important roles as components in electronic devices because of their high electrical conductivity, chemical stability, and density. In the field of MEMS devices, the demand for continuous miniaturization and sensitivity enhancement is always high. Especially for MEMS accelerometers, sensitivity is affected by Brownian noise, and components with sufficient mass are needed to suppress this noise. Therefore, it is difficult to reduce the dimensions of components to allow further miniaturization of the device. This book presents recent progress in noble metal electrodeposition and applications of gold-based materials in the realization of highly sensitive CMOS-MEMS accelerometers.

This book is current to November 2018. This is Book 1 of 2. Many people use the Treasury Financial Manual (TFM) every work day and it is a necessary document to do their job. Volume 1 is over 1,000 pages. Sometimes you have to take the TFM to a conference room as a reference tool. Typically, that's several large binders so you need a small wagon just to access the information. Seems so much easier to bring along a mobile device. It is our intention to print all 4 Volumes. Because Volume 1 is so big, it is 2 books. Book 1 contains Part 1 and Part 2 up to Chapter 4700 Appendix 3 Book 2 contains Part 4700 Appendix 4 to end of Volume 1 We also print the other 3 Volumes in one book. Why buy a book you can download for free? We print this book so you don't have to. First you gotta find a good clean (legible) copy and make sure it's the latest version (not always easy). Some documents found on the web are missing some pages or the image quality is so poor, they are difficult to read. We look over each document carefully and replace poor quality images by going back to the original source document. We proof each document to make sure it's all there - including all changes. If you find a good copy, you could print it using a network printer you share with 100 other people (typically its either out of paper or toner). If it's just a 10-page document, no problem, but if it's 1,000-pages, you will need to punch 3 holes in all those pages and put it in a 3-ring binder. Takes at least an hour. It's much more cost-effective to just order the latest version from Amazon.com This book includes original commentary which is copyright material. Note that government documents are in the public domain. We print these large documents as a service so you don't have to. The books are compact, tightly-bound, full-size (8 1/2 by 11 inches), with large text and glossy covers. 4th Watch Publishing Co. is a HUBZONE SDVOSB. <https://usgovpub.com>

Two-Fluid Model Stability, Simulation and ChaosSpringer

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