

Access Free Markov Chains Springer Pdf Free Copy

Markov Chains Sustainable Supply Chains Next Generation Supply Chains [Markov Chains Guide to Supply Chain Management](#) **Approximate Quantum Markov Chains Global Supply Chain and Operations Management Understanding Markov Chains Pharmaceutical Supply Chains - Medicines Shortages Continuous-Time Markov Chains Markov Chains with Stationary Transition Probabilities Networks Against Time Sharing Economy Supply Chain Finance Solutions Chains of Gold Sustainable Global Value Chains** [Advanced Planning in Supply Chains Africa and Sustainable Global Value Chains Environmentally Responsible Supply Chains Strategic Supply Chain Management Agricultural Value Chains in India Markov Chains and Stochastic Stability Analysis and Algorithms for Service Parts Supply Chains Introduction to Markov Chains Non-negative Matrices and Markov Chains Supply Chain Engineering Springer Handbook of Mechanical Engineering Cross-Chain Collaboration in Logistics Kuranishi Structures and Virtual Fundamental Chains Designing Value-Creating Supply Chain Networks Environmental Sustainability in Asian Logistics and Supply Chains Springer Handbook of Nanotechnology A Theory of Supply Chains Springer Handbook of Ocean Engineering Supply Chain Resilience Supply Chain Finance Modelling Supply Chain Dynamics Springer Handbook of Surface Science Managing Supply Chain Risk Springer Handbook of Glass](#)

Thank you very much for downloading **Markov Chains Springer**. Maybe you have knowledge that, people have search hundreds times for their chosen novels like this Markov Chains Springer, but end up in malicious downloads. Rather than reading a good book with a cup of tea in the afternoon, instead they cope with some harmful virus inside their laptop.

Markov Chains Springer is available in our book collection an online access to it is set as public so you can download it instantly. Our books collection spans in multiple countries, allowing you to get the most less latency time to download any of our books like this one. Kindly say, the Markov Chains Springer is universally compatible with any devices to read

Eventually, you will totally discover a new experience and completion by spending more cash. still when? accomplish you consent that you require to acquire those all needs subsequently having significantly cash? Why dont you try to acquire something basic in the beginning? Thats something that will guide you to comprehend even more almost the globe, experience, some places, taking into account history, amusement, and a lot more?

It is your unconditionally own mature to put it on reviewing habit. accompanied by guides you could enjoy now is **Markov Chains Springer** below.

If you ally compulsion such a referred **Markov Chains Springer** books that will meet the expense of you worth, get the certainly best seller from us currently from several preferred authors. If you desire to hilarious books, lots of novels, tale, jokes, and more fictions collections are then launched, from best seller to one of the most current released.

You may not be perplexed to enjoy all book collections Markov Chains Springer that we will definitely offer. It is not roughly the costs. Its practically what you need currently. This Markov Chains Springer, as one of the most committed sellers here will unquestionably be accompanied by the best options to review.

Recognizing the mannerism ways to get this ebook **Markov Chains Springer** is additionally useful. You have remained in right site to start getting this info. acquire the Markov Chains Springer connect that we come up with the money for here and check out the link.

You could purchase guide Markov Chains Springer or get it as soon as feasible. You could quickly download this Markov Chains Springer after getting deal. So, afterward you require the ebook swiftly, you can straight get it. Its so entirely simple and in view of that fats, isnt it? You have to favor to in this make public

This book covers the classical theory of Markov chains on general state-spaces as well as many recent developments. The theoretical results are illustrated by simple examples, many of which are taken from Markov Chain Monte Carlo methods. The book is self-contained, while all the results are carefully and concisely proven. Bibliographical notes are added at the end of each chapter to provide an overview of the literature. Part I lays the foundations of the theory of Markov chain on general states-space. Part II covers the basic theory of irreducible Markov chains on general states-space, relying heavily on regeneration techniques. These two parts can serve as a text on general state-space applied Markov chain theory. Although the choice of topics is quite different from what is usually covered, where most of the emphasis is put on countable state space, a graduate student should be able to read almost all these developments without any mathematical background deeper than that needed to study countable state space (very little measure theory is required). Part III covers advanced topics on the theory of irreducible Markov chains. The emphasis is on geometric and subgeometric convergence rates and also on computable bounds. Some results appeared for a first time in a book and others are original. Part IV are selected topics on Markov chains, covering mostly hot recent developments. This book examines cross-chain control centers (4C), an ambitious concept in supply chain management and logistics that is intended to foster collaboration between different supply chains to increase efficiency. It provides an overview of the main results, insights, and other developments in the academic field of horizontal collaboration. Furthermore, it gives recommendations to governments, commercial companies, and academia on how to proceed with horizontal logistics collaboration in the years to come. To link research with practice, the book takes the Dutch project on cross-chain collaboration centers (4Cs) and identifies a typology of existing patterns for horizontal collaboration in supply chains. Finally, the book zooms in on the Netherlands as a case-study of intense public-private partnerships to develop 4C as a mature logistics value proposition. It provides an overview of the accomplishments in the government supported 4C projects and offers a critical reflection of why some more ambitious and structural solutions have not found solid ground yet. The book is of value to researchers and professionals in the supply chain domain. This essential guide brings supply chain theory to life. Intended for readers with a business interest in supply chain management, the book covers the key topics in eleven chapters, including planning, sourcing, making, delivering and returning, as well as strategy, people, finance, customer service and outsourcing. Each chapter starts with a brief summary and learning objectives that guide the reader through the text. This second edition also explores digital, sustainability and innovation impacts on today's global supply chains. The book is written in a clear and simple way, featuring a variety of figures, tables and recommendations for further reading. The respective chapters conclude with real-life case studies from different companies, illustrating best practices. In the course of their work, the authors have met professionals all over the world who are passionate about their business achievements. By including their vivid examples, the guide brings theory to life, enabling readers to understand and embrace the concepts and ideas presented. Colin Scott, Henriette Lundgren and Paul Thompson are experts in supply chain management and have worked with practitioners in businesses across the globe. Endorsement: This guide is a really useful reminder of what good practice is and how it should be applied within supply chain management. The book is relevant for students of supply chain management and professional practitioners alike. This book offers an invaluable guide to understanding the specific dynamics of your supply chain and the fundamentals underpinning it. It provides the framework for delivering a supply chain strategy based upon recognised best practice. Martin McCourt, CEO, Dyson Limited . Primarily an introduction to the theory of stochastic processes at the undergraduate or beginning graduate level, the primary objective of this book is to initiate students in the art of stochastic modelling. However it is motivated by significant applications and progressively brings the student to the borders of contemporary research. Examples are from a wide range of domains, including operations research and electrical engineering. Researchers and students in these areas as well as in physics, biology and the social sciences will find this book of interest. Since its inception by Perron and Frobenius, the theory of non-negative matrices has developed enormously and is now being used and extended in applied fields of study as diverse as probability theory, numerical analysis, demography, mathematical economics, and dynamic programming, while its development is still proceeding rapidly as a branch of pure mathematics in its own right. While there are books which cover this or that aspect of the theory, it is nevertheless not uncommon for workers in one or another branch of its development to be unaware of what is known in other branches, even though there is often formal overlap. One of the purposes of this book is to relate several aspects of the theory, insofar as this is possible. The author hopes that the book will be useful to mathematicians; but in particular to the workers in applied fields, so the mathematics has been kept as simple as could be managed. The mathematical requisites for reading it are: some knowledge of real-variable theory, and matrix theory; and a little knowledge of complex-variable; the emphasis is on real-variable methods. (There is only one part of the book, the second part of 55.5, which is of rather specialist interest, and requires deeper knowledge.) Appendices provide brief expositions of those areas of mathematics needed which may be less generally known to the average reader. Since 2004 and with the 2nd edition in 2006, the Springer Handbook of Nanotechnology has established itself as the definitive reference in the nanoscience and nanotechnology area. It integrates the knowledge from nanofabrication, nanodevices, nanomechanics, Nanotribology, materials science, and reliability engineering in just one volume. Beside the presentation of nanostructures, micro/nanofabrication, and micro/nanodevices, special emphasis is on scanning probe microscopy, nanotribology and nanomechanics, molecularly thick films, industrial applications and microdevice reliability, and on social aspects. In its 3rd edition, the book grew from 8 to 9 parts now including a part with chapters on biomimetics. More information is added to such fields as bionanotechnology, nanorobotics, and (bio)MEMS/NEMS, bio/nanotribology and bio/nanomechanics. The book is organized by an experienced editor with a universal knowledge and written by an international team of over 150 distinguished experts. It addresses mechanical and electrical engineers, materials scientists, physicists and chemists who work either in the nano area or in a field that is or will be influenced by this new key technology. This book highlights what it takes to be successful in identifying and executing environmental responsibility from an operational perspective. It provides cutting-edge research from globally recognized field experts. It is a useful resource for practitioners to explore why and how firms engage in environmentally responsible operations, but also a valuable resource for academics as an introductory reference that provides direct exposure to key environmental operational problems faced by many firms today. This book can also be used as an introductory reading for students with varying educational backgrounds - from business school students interested in environmental issues to environmental scientists interested in obtaining a business perspective - as it provides a broad scope of key issues at the interface of operations management and environmental and social responsibility. Environmentally Responsible Supply Chains is structured in a modular fashion, with each chapter introducing and analyzing a specific timely topic, allowing readers to identify the chapters that relate to their interests. More specifically, the book distinguishes between two key drivers of environmental responsibility: Profit and Regulatory compliance. The book is divided into five sections. The first three sections of the book explore profit driven environmental responsibility, and provide examples as to where the motives for environmentally responsible business practices come from, where business opportunities are, and what operational perspectives are key to profitability. The last two sections of the book focus on regulation as a driver of environmental responsibility and identify motives, opportunities, or operational perspectives as to effective regulatory compliance. Ultimately the book introduces the reader to the fundamentals of sustainable operations and highlights the latest research on the topic. Advanced Planning Systems (APS) are a key enabler of the supply chain management. However, APS are highly complex and difficult to comprehend. This book provides students with valuable insights into the capabilities of state-of-the-art APS and bridges the gap between theory (model building and solution algorithms), software implementation, and adaptation to a specific business case. Our business case – named Frutado – provides a unifying framework for illustrating the different planning tasks that arise in a company – from demand planning to the distribution of goods – that are addressed by APS. In addition, the book guides through interactive learning units which have been created and recorded for each module of SAP's APS. Learning units can be downloaded free of charge ready to be displayed in a web browser. Together, the textbook and the learning units provide the required skills to better understand the concepts, models, and algorithms underlying today's APS. This handbook is the definitive reference for the interdisciplinary field that is ocean engineering. It integrates the coverage of fundamental and applied material and encompasses a diverse spectrum of systems, concepts

and operations in the maritime environment, as well as providing a comprehensive update on contemporary, leading-edge ocean technologies. Coverage includes an overview on the fundamentals of ocean science, ocean signals and instrumentation, coastal structures, developments in ocean energy technologies and ocean vehicles and automation. It aims at practitioners in a range of offshore industries and naval establishments as well as academic researchers and graduate students in ocean, coastal, offshore and marine engineering and naval architecture. The Springer Handbook of Ocean Engineering is organized in five parts: Part A: Fundamentals, Part B: Autonomous Ocean Vehicles, Subsystems and Control, Part C: Coastal Design, Part D: Offshore Technologies, Part E: Energy Conversion This book is an introduction to quantum Markov chains and explains how this concept is connected to the question of how well a lost quantum mechanical system can be recovered from a correlated subsystem. To achieve this goal, we strengthen the data-processing inequality such that it reveals a statement about the reconstruction of lost information. The main difficulty in order to understand the behavior of quantum Markov chains arises from the fact that quantum mechanical operators do not commute in general. As a result we start by explaining two techniques of how to deal with non-commuting matrices: the spectral pinching method and complex interpolation theory. Once the reader is familiar with these techniques a novel inequality is presented that extends the celebrated Golden-Thompson inequality to arbitrarily many matrices. This inequality is the key ingredient in understanding approximate quantum Markov chains and it answers a question from matrix analysis that was open since 1973, i.e., if Lieb's triple matrix inequality can be extended to more than three matrices. Finally, we carefully discuss the properties of approximate quantum Markov chains and their implications. The book is aimed to graduate students who want to learn about approximate quantum Markov chains as well as more experienced scientists who want to enter this field. Mathematical majority is necessary, but no prior knowledge of quantum mechanics is required.

“Supply Chain Risk Management is an issue that many companies face and yet few companies know how to deal with it in a systematic and pragmatic manner. While avoiding and reducing supply chain risks are certainly preferable, developing ways to restore and stabilize supply chain operations rapidly after a major disruption is critical for managing global supply chains. Sodhi and Tang present important concepts, frameworks, strategies, and analyses that are essential for managing supply chain risks. Not only does this book suggest some practical ways to work with different partners to manage the risks that are present in a global supply chain, it creates a framework that would enable practitioners to engage researchers to work on this important area.” —Thomas A. Debrowski, Executive Vice President, Worldwide Operations, Mattel, Inc.

“When a firm outsources its operations to external suppliers, the firm is vulnerable to major and rare disruptions that can occur at any link in the global supply chain. Because these disruptions rarely occur, few firms take commensurable actions to identify, assess, mitigate and respond to various types of supply chain risks. By introducing frameworks and concepts along with several case studies and a review of academic literature, Sodhi and Tang treat this important subject with practical relevance and academic rigor. This book will bring practitioners and researchers to develop effective and efficient ways to manage supply chain risks.” —Marshall L. Fisher, UPS Professor, Professor of Operations and Information Management and Co-Director of Fishman-Davidson Center for Service and Operations Management, The Wharton School, University of Pennsylvania

“This book ties observations in practice to methodologies and research. The rich case examples motivated the approaches and methodologies used to mitigate risks, and in the course of doing so, Sodhi and Tang provided insights on existing and new research opportunities. As a result, this book is highly relevant to both practitioners and academics. Also, the book is also written with management lessons on how risks can be mitigated, and how risks can be contained once disruptions have occurred. As such, it is also a book for management to gain insights and to develop management skills.” —Hau L. Lee, Thoma Professor of Operations, Information and Technology and Director of the Stanford Global Supply Chain Management Forum, Graduate School of Business, Stanford University

“As companies have extended their supply chains globally and as the face increasing resource issues, they face a number of new risk challenges. While there are various case studies written about supply chain risks, this book gives a comprehensive treatment of the subject with clarity. The concepts and frameworks developed by Sodhi and Tang in this book would create awareness of this important and yet not well understood subject, and strategies described in this book would stimulate practitioners to develop a holistic approach for identifying, assessing, mitigating, and responding to different types of supply chain risks.” —Nick Wildgoose, Global Supply Chain Proposition Manager, Zurich Insurance

This work was stimulated by a comment made by a former student (Prof. Alan Erera of Georgia Tech) in connection with an inventory stability game he was going to play in one of his logistics classes. This was the well-known “beer-game” that is often played in business schools to illustrate the “bullwhip” effect in supply chains. Al had said to me that he did not have to tell his students how to reorder replacement parts from the other members of the supply chain because he knew from experience that the order sizes the players would generate as the game progressed would become chaotic anyhow. Since I had not played the beer game, his assertion was intriguing to me. Why would such an unstructured game always lead to the same undesirable effect? Did it have something to do with psychology? What is it that players did to generate instabilities? I posed these to other people but could not get completely satisfactory answers. Thus, the bullwhip mystery remained, at least in my mind. Since inventory chains are “conservative” systems analogous to a traffic stream, and since traffic flow models exhibit similar effects (the instability of automobile platoons and of certain numerical methods being two notable examples) I suspected that traffic flow theory might shed some light on the puzzle. This open access book explores supply chain strategies to help companies face challenges such as societal emergency, digitalization, climate changes and scarcity of resources. The book identifies industrial scenarios for the next decade based on the analysis of trends at social, economic, environmental technological and political level, and examines how they may impact on supply chain processes and how to design next generation supply chains to answer these challenges. By mapping enabling technologies for supply chain innovation, the book proposes a roadmap for the full implementation of the supply chain strategies based on the integration of production and logistics processes. Case studies from process industry, discrete manufacturing, distribution and logistics, as well as ICT providers are provided, and policy recommendations are put forward to support companies in this transformative process. This textbook presents a coherent and robust structure for integrated risk management in the context of operations and finance. It explains how the operations-finance interface jointly optimizes material and financial flows under intricate risk exposures. The book covers financial flexibility, operational hedging, enterprise risk management (ERM), supply chain risk management (SCRM), integrated risk management (IRM), supply chain finance (SCF), and financial management of supply chain strategies. Both qualitative and quantitative approaches – including conceptualization, theory building, analytical modeling, and empirical research – are used to assess the value creation by integrating operations and finance.

“This book provides a comprehensive description of the interactions between finance and operations and of how managers can best make decisions in recognition of these effects.” John R. Birge, University of Chicago

“Supply chain finance is an emerging area where innovations can unlock great values to complement the advances in information and physical flows of supply chain.” Hau L. Lee, Stanford University

“This book provides an excellent overview of supply chain finance and its most recent advances.” Jan A. Van Mieghem, Northwestern University

“This book is indispensable for advanced students as well as practitioners when looking for a pedagogical sound and scientific rigorous approach to Supply Chain Finance.” Ralf W. Seifert, IMD/EPFL

“The book advances our knowledge on the interface between operations and finance and provides managerial guidelines for effective risk management in the supply chain.” Xiande Zhao, CEIBS

The book “Supply Chain Finance Solutions” offers orientation in the new discipline of Supply Chain Finance (SCF) by investigating the need for and nature of SCF, along with its characteristics and enablers. Due to the novelty of the Supply Chain Finance approach, there are still many knowledge gaps. This lack of research leads to uncertainties about the successful implementation of SCF solutions within companies as there is little quantified evidence on the achievable cost savings and other potential benefits. The authors close this gap by providing the latest information on business concepts and the SCF market. Based on a sample SCF model, the worldwide market size for such solutions and potential cost savings to companies engaged in SCF are analyzed. The work underlines the generally agreed-upon attractiveness and future relevance of SCF solutions by creating win-win situations; for all actors in the end-to-end supply chain as well as for external service providers. This book gathers together invited presentations from the 12th International Congress on Logistics and SCM Systems (ICLS2017) held in Beijing, China, August 20–23, 2017. The focus of the ICLS2017 was environmental sustainability in logistics and supply chains, particularly in the Asia-Pacific region. It addressed a variety of themes in the domains of green logistics and supply chain management (SCM), including green logistics and environmental impact, green SCM and business performance, green operations and optimization, supply chain sustainability, carbon management in logistics, and green SCM and corporate social responsibility (CSR). The editors selected high-quality presentations from the highly successful symposium, and invited the presenters to prepare full chapters for this book in order to disseminate their findings and promote further research collaborations. This timely book sheds new light on the theories and practices associated with greening logistics and SCM in Asia. The third edition of this textbook comprehensively discusses global supply chain and operations management (SCOM), combining value creation networks and interacting processes. It focuses on operational roles within networks and presents the quantitative and organizational methods needed to plan and control the material, information, and financial flows in supply chains. Each chapter begins with an introductory case study, while numerous examples from various industries and services help to illustrate the key concepts. The book explains how to design operations and supply networks and how to incorporate suppliers and customers. It examines how to balance supply and demand, a core aspect of tactical planning, before turning to the allocation of resources to meet customer needs. In addition, the book presents state-of-the-art research reflecting the lessons learned from the COVID-19 pandemic, and emerging, fast-paced developments in the digitalization of supply chain and operations management. Providing readers with a working knowledge of global supply chain and operations management, with a focus on bridging the gap between theory and practice, this textbook can be used in core, specialized, and advanced classes alike. It is intended for a broad range of students and professionals in supply chain and operations management. Besides the investigation of general chains the book contains chapters which are concerned with eigenvalue techniques, conductance, stopping times, the strong Markov property, couplings, strong uniform times, Markov chains on arbitrary finite groups (including a crash-course in harmonic analysis), random generation and counting, Markov random fields, Gibbs fields, the Metropolis sampler, and simulated annealing. With 170 exercises. This book covers the scope of supply chain and logistics, which has continued to grow with a rapid speed. The book includes core aspects of supply chain and logistics philosophy and practice. The authors then cover the general principles of supply chain and logistics that can be applied in countries throughout the world. Where concepts cannot be generalized, they are based primarily on a European model. The authors have also added some international material and examples from China, Pakistan, India, and the USA. The book is intended to help in the quest of supply chain and logistics to reduce cost and improve service, as well as to keep up-to-date the different facets of supply chain and logistics in a global market. In addition, this book helps candidates to who are undertaking examinations for universities and professional institutes, and bachelor and master students who are studying for degrees in supply chain management. In addition, the book covers technical terminologies, definitions, and a supply chain dictionary. This book investigates individual companies’ and industries’ supply chain risk management approaches to identify risk drivers and verify effective risk-reduction measures and business continuity plans. Typically, supply chain risk assessments focus on normative guidelines based on single best practice examples or vulnerability events, and there has been little work exploring how the concepts of supply chain risk management and resilience are related. However, since this relationship has implications for developing integrated response strategies, a clear understanding of the possible consequences is a fundamental step in building socio-economic resilience along the supply chain. Against this background, the book addresses three main topics: firstly, it defines the conceptual and sectoral domains of supply chain risk management and resilience by examining the welfare effects of extreme weather events and other economic shocks on selected global supply chains. It then presents an in-depth analysis of the scope of public-private partnerships to tackle the risks, by empirically exploring supply chain risk effects and information management. Thirdly, it proposes a regional cooperation framework in the context of major supply chain vulnerability events such as disasters and global financial crises. The focus of Supply Chain Engineering is the engineering design and planning of supply chain systems. There exists a very large variety of supply chain system types, all with different goals, constraints, and decisions, but a systematic approach for the design and planning of any supply chain can be based on the principles and methods of system engineering. In this book, author Marc Goetschalckx presents material developed at the Georgia Tech Supply Chain and Logistics Institute, the largest supply chain and logistics research and education program in the world. The book can be roughly divided into four sections. The first section focuses on data management. Since most of planning and design requires making decisions today so that supply chain functions can be executed efficiently in the future, this section introduces forecasting principles and techniques. The second section of the book focuses on transportation systems. First, the characteristics of transportation assets and infrastructure are shown. Then four chapters focus on the planning of transportation activities depending on who controls the transportation assets. The third section of the book is focused on storing goods, and the last section of the book is focused on supply chain systems that consider simultaneously procurement, production, and transportation and inventory as well as the design of the supply chain infrastructure or network design. In each chapter, first a model of the process being studied is developed followed by a description of practical solution algorithms. More advanced material is typically described in appendices. This makes it possible to use an integrated, breath-first treatment of supply chain systems by using the initial material in each chapter. A more in depth treatment of a specific topic or process can be found towards the end of each chapter. End-of-chapter exercises are included throughout. This text is suitable for several target audiences. The first target is a course for upper-level undergraduate students on supply chains. The second target is the use in a capstone senior design project in the supply chain area. The third target is an introductory course on supply chains either in a master of engineering or a master of business administration program, and the final audience consists of students attending logistics or supply chain post-graduate or continuing education courses. Value chains are a vital part of how our world operates, yet we are only beginning to understand how to make them sustainable. This volume addresses the crux of that challenge by presenting a broad array of options for understanding and managing the complexity of sustainability initiatives that affect, and are also influenced by value chains. Its chapters present diverse perspectives on both political and private sector governance, including governmental regulations and private standards, and embrace the emergent and critical value of innovative approaches to monitoring and evaluating progress. Finally, the volume offers a review of concrete examples for transformation and transition towards more sustainable value chains in selected sectors, including, amongst others, agriculture, forestry, mining,

and tourism. * Provides a broad overview of modeling approaches and solution methodologies for addressing inventory problems, particularly the management of high cost, low demand rate service parts found in multi-echelon settings * The text may be used in a variety of courses for first-year graduate students or senior undergraduates, or as a reference for researchers and practitioners * A background in stochastic processes and optimization is assumed This handbook provides comprehensive treatment of the current state of glass science from the leading experts in the field. Opening with an enlightening contribution on the history of glass, the volume is then divided into eight parts. The first part covers fundamental properties, from the current understanding of the thermodynamics of the amorphous state, kinetics, and linear and nonlinear optical properties through colors, photosensitivity, and chemical durability. The second part provides dedicated chapters on each individual glass type, covering traditional systems like silicates and other oxide systems, as well as novel hybrid amorphous materials and spin glasses. The third part features detailed descriptions of modern characterization techniques for understanding this complex state of matter. The fourth part covers modeling, from first-principles calculations through molecular dynamics simulations, and statistical modeling. The fifth part presents a range of laboratory and industrial glass processing methods. The remaining parts cover a wide and representative range of applications areas from optics and photonics through environment, energy, architecture, and sensing. Written by the leading international experts in the field, the Springer Handbook of Glass represents an invaluable resource for graduate students through academic and industry researchers working in photonics, optoelectronics, materials science, energy, architecture, and more. This book is primarily intended to serve as a research-based textbook on sustainable supply chains for graduate programs in Business, Management, Industrial Engineering, and Industrial Ecology, but it should also be of interest for researchers in the broader sustainable supply chain space, whether from the operations management and industrial engineering side or more from the industrial ecology and life-cycle assessment side. Finding efficient solutions towards a more sustainable supply chain is increasingly important for managers, but clearly this raise difficult questions, often without clear answers. This book aims to provide insights into these kinds of questions for students and practitioners, based on the latest academic research. This handbook delivers an up-to-date, comprehensive and authoritative coverage of the broad field of surface science, encompassing a range of important materials such metals, semiconductors, insulators, ultrathin films and supported nanoobjects. Over 100 experts from all branches of experiment and theory review in 39 chapters all major aspects of solid-state surfaces, from basic principles to applications, including the latest, ground-breaking research results. Beginning with the fundamental background of kinetics and thermodynamics at surfaces, the handbook leads the reader through the basics of crystallographic structures and electronic properties, to the advanced topics at the forefront of current research. These include but are not limited to novel applications in nanoelectronics, nanomechanical devices, plasmonics, carbon films, catalysis, and biology. The handbook is an ideal reference guide and instructional aid for a wide range of physicists, chemists, materials scientists and engineers active throughout academic and industrial research. This resource covers all areas of interest for the practicing engineer as well as for the student at various levels and educational institutions. It features the work of authors from all over the world who have contributed their expertise and support the globally working engineer in finding a solution for today's mechanical engineering problems. Each subject is discussed in detail and supported by numerous figures and tables. Despite significant achievements, the discipline of supply chain management is still unable to satisfactorily handle many practical real-world challenges. The authors of *Networks Against Time* claim that a unified supply chain network analytics framework is needed which should be able to handle optimization and competitive behavior while also maintain relevance to many industrial sectors in which perishable products are prominent, from healthcare to food and from fashion apparel to technology. This Brief provides a wide range of critical supply chain problems which are modeled as generalized networks. Guidelines are provided to determine the arc multipliers that capture perish ability of the product whether food, radioisotopes, or even highly perishable blood in healthcare over space and time. Through case studies the authors portray the application of the models and algorithms to real-world sectors which illustrate the power of the framework in practice. The models and algorithms are fully described along with the input and output data in the case studies. This level of transparency is useful pedagogically as well as for future research and for applications in practice. Researchers and practitioners in mathematics, in operations research and management science, operations management, as well as in economics and computer science will find this book useful to gain a broader appreciation of the richness of network supply chain structures, processes, and applications. This book can also be used by advanced undergraduate students and graduate students in the disciplines noted above to familiarize themselves with methodologies and supply chain network models and applications.?? The package of Gromov's pseudo-holomorphic curves is a major tool in global symplectic geometry and its applications, including mirror symmetry and Hamiltonian dynamics. The Kuranishi structure was introduced by two of the authors of the present volume in the mid-1990s to apply this machinery on general symplectic manifolds without assuming any specific restrictions. It was further amplified by this book's authors in their monograph *Lagrangian Intersection Floer Theory* and in many other publications of theirs and others. Answering popular demand, the authors now present the current book, in which they provide a detailed, self-contained explanation of the theory of Kuranishi structures. Part I discusses the theory on a single space equipped with Kuranishi structure, called a K-space, and its relevant basic package. First, the definition of a K-space and maps to the standard manifold are provided. Definitions are given for fiber products, differential forms, partitions of unity, and the notion of CF-perturbations on the K-space. Then, using CF-perturbations, the authors define the integration on K-space and the push-forward of differential forms, and generalize Stokes' formula and Fubini's theorem in this framework. Also, "virtual fundamental class" is defined, and its cobordism invariance is proved. Part II discusses the (compatible) system of K-spaces and the process of going from "geometry" to "homological algebra". Thorough explanations of the extension of given perturbations on the boundary to the interior are presented. Also explained is the process of taking the "homotopy limit" needed to handle a system of infinitely many moduli spaces. Having in mind the future application of these chain level constructions beyond those already known, an axiomatic approach is taken by listing the properties of the system of the relevant moduli spaces and then a self-contained account of the construction of the associated algebraic structures is given. This axiomatic approach makes the exposition contained here independent of previously published construction of relevant structures. This book provides an insight of relevant case studies and updated practices in "PharmaceuticalSupply Chains" (PharmSC) while addressing the most relevant topics within the COST Action "Medicines Shortages" (CA15105).The volume focuses on the most recent developments in the design, planning and scheduling ofPharmSC, broadening from the suppliers' selection to the impact on patients and healthcare systems, addressing uncertainty and risk mitigation, and computational issues. It is directed at MSc/PhD students and young researchers (Post-Docs) in Pharmaceutics/Pharmaceutical sciences, Engineering fields, Economics/Management, as well as pharmaceutical decision makers, managers, and practitioners, and advanced readers demanding a fresh approach to decision making for PharmSC. The contributed chapters are associated with the homonymous COST Training Schools (TS), and the book creates a better understanding of the Action "Medicines Shortages" challenges and opportunities. This open access book provides a clear holistic conceptual framework of CISS-F (competitiveness, inclusiveness, sustainability, scalability and access to finance) to analyse the efficiency of value chains of high value agricultural commodities in India. It is based on the understanding that agriculture is an integrated system that connects farming with logistics, processing and marketing. Farmer's welfare being central to any agricultural policy makes it very pertinent to study how a value chain works and can be strengthened further to realize this policy goal. This book adds value to the existing research by studying the value chains end-to-end across a wide spectrum of agricultural commodities with the holistic lens of CISS-F. It is not enough that a value chain is competitive but not inclusive or it is competitive and inclusive but not sustainable. The issue of scalability is very critical to achieve macro gains in terms of greater farmer outreach and sectoral growth. The research undertaken here brings out some very useful insights for policymaking in terms of what needs to be done better to steer the agricultural value chains towards being more competitive, inclusive, sustainable and scalable. The value chain specific research findings help draw very nuanced policy recommendations as well as present a big picture of the future direction of policy making in agriculture. The theory of Markov chains, although a special case of Markov processes, is here developed for its own sake and presented on its own merits. In general, the hypothesis of a denumerable state space, which is the defining hypothesis of what we call a "chain" here, generates more clear-cut questions and demands more precise and definitive answers. For example, the principal limit theorem (§§ 1. 6, II. 10), still the object of research for general Markov processes, is here in its neat final form; and the strong Markov property (§ 11. 9) is here always applicable. While probability theory has advanced far enough that a degree of sophistication is needed even in the limited context of this book, it is still possible here to keep the proportion of definitions to theorems relatively low. . From the standpoint of the general theory of stochastic processes, a continuous parameter Markov chain appears to be the first essentially discontinuous process that has been studied in some detail. It is common that the sample functions of such a chain have discontinuities worse than jumps, and these baser discontinuities play a central role in the theory, of which the mystery remains to be completely unraveled. In this connection the basic concepts of separability and measurability, which are usually applied only at an early stage of the discussion to establish a certain smoothness of the sample functions, are here applied constantly as indispensable tools. This edited book examines the challenges and opportunities arising from today's sharing economy from an operations management perspective. Individual chapter authors present state-of-the-art research that examines the general impact of sharing economy on production and consumption; the intermediary role of a sharing platform; crowdsourcing management; and context-based operational problems. Sharing economy refers to a market model that enables and facilitates the sharing of access to goods and services. For example, Uber allows riders to share a car. Airbnb allows homeowners to share their extra rooms with renters. Groupon crowdsources demands, enabling customers to share the benefit of discounted goods and services, whereas Kickstarter crowdsources funds, enabling backers to fund a project jointly. Unlike the classic supply chain settings in which a firm makes inventory and supply decisions, in sharing economy, supply is crowdsourced and can be modulated by a platform. The matching-supply-with-demand process in a sharing economy requires novel perspectives and tools to address challenges and identify opportunities. The book is comprised of 20 chapters that are divided into four parts. The first part explores the general impact of sharing economy on the production, consumption, and society. The second part explores the intermediary role of a sharing platform that matches crowdsourced supply with demand. The third part investigates the crowdsourcing management on a sharing platform, and the fourth part is dedicated to context-based operational problems of popular sharing economy applications. "While sharing economy is becoming omnipresence, the operations management (OM) research community has begun to explore and examine different business models in the transportation, healthcare, financial, accommodation, and sourcing sectors. This book presents a collection of the state-of-the-art research work conducted by a group of world-leading OM researchers in this area. Not only does this book cover a wide range of business models arising from the sharing economy, but it also showcases different modeling frameworks and research methods that cannot be missed. Ultimately, this book is a tour de force – informative and insightful!" Christopher S. Tang Distinguished Professor and Edward Carter Chair in Business Administration UCLA Anderson School of Management Winner of the 2016 Coup de Coeur prize at the Plumes des Achats & Supply Chain, Paris. Focusing on the design of robust value-creating supply chain networks (SCN) and key strategic issues related to the number; location, capacity and mission of supply chain facilities (plants, distribution centers) – as well as the network structure required to provide flexibility and resilience in an uncertain world – this book presents an innovative methodology for SCN reengineering that can be used to significantly improve the bottom line of supply chain dependent businesses. Providing readers with the tools needed to analyze and model value creation activities, *Designing Value-Creating Supply Chain Networks* examines the risks faced by modern supply chains, and shows how to develop plausible future scenarios to evaluate potential SCN designs. The design methods proposed are based on a visual representation formalism that facilitates the analysis and modeling of SCN design problems, book chapters incorporate several example problems and exercises which can be solved with Excel tools (Analysis tools and Solver) or with commercial statistical and optimization software. This book contains a collection of studies on the interactions between businesses in Africa and Global Value Chains (GVCs) in terms of social, environmental and economic sustainability. This is particularly pertinent given the asymmetrical power distribution between the global buyer and the African supplier, their governance relationships and the ongoing competitive pressures to reduce costs and increase flexibility to meet GVC demands. Rather than focusing on the sustainability of a single organization, GVCs address the sustainability of inter-firm value chains and global industries as a whole. With little differentiation between value chain creation and social / environmental degradation extending to people and raw material extraction (upstream) and disposal or recycling (downstream), sustainability issues need to be at the forefront of African business research interests. Nowadays, sustainability is considered a competitive advantage for a firm looking to join a GVC. Whether sustainability is approached from the viewpoint of an exporting firm motivated to join a GVC in its respective industry or whether a firm's continuing contractual or collaborative relationship with a buyer depends on its compliance with sustainability standards, both approaches focus on the ability of firms in Africa to benefit from joining sustainable GVCs. Continuous time parameter Markov chains have been useful for modeling various random phenomena occurring in queueing theory, genetics, demography, epidemiology, and competing populations. This is the first book about those aspects of the theory of continuous time Markov chains which are useful in applications to such areas. It studies continuous time Markov chains through the transition function and corresponding q-matrix, rather than sample paths. An extensive discussion of birth and death processes, including the Stieltjes moment problem, and the Karlin-McGregor method of solution of the birth and death processes and multidimensional population processes is included, and there is an extensive bibliography. Virtually all of this material is appearing in book form for the first time. A doomed king and his wife-to-be attempt to flee their fate in this novel by "the finest fantasy writer of this or any decade" (Marion Zimmer Bradley). Cerilla, the sheltered, castle-bound protagonist of this inventive and moving fantasy novel, is determined to escape her bloody fate: marriage to a king who is to be sacrificed after she bears his child. But Cerilla makes the monumental mistake of falling in love with her god-like husband to be—Arlen of the Sacred Isle—and he with her. Arlen's devoted comrade Lonan takes Arlen's place so the lovers can flee. But their escape is just the beginning of an odyssey marked by struggle and hardship as they cope with hyperboreal storms, near starvation, and attack by a band of armed horsemen. As they journey across harsh and fantastic lands, finally making a home beyond the Mountains of the Mysteries, Cerilla discovers how much she is willing to give up in the name of love. Featuring a mythical world where horses gallop across water and serpents live beneath the earth, *Chains of Gold* is about finding your path in life, staying true to who

you are, and the ultimate meaning of sacrifice. From a winner of the Tiptree Award and other honors, an author who “writes like a dream,” it’s an unforgettable reading experience (St. Louis Post-Dispatch). This book provides an undergraduate-level introduction to discrete and continuous-time Markov chains and their applications, with a particular focus on the first step analysis technique and its applications to average hitting times and ruin probabilities. It also discusses classical topics such as recurrence and transience, stationary and limiting distributions, as well as branching processes. It first examines in detail two important examples (gambling processes and random walks) before presenting the general theory itself in the subsequent chapters. It also provides an introduction to discrete-time martingales and their relation to ruin probabilities and mean exit times, together with a chapter on spatial Poisson processes. The concepts presented are illustrated by examples, 138 exercises and 9 problems with their solutions. New up-to-date edition of this influential classic on Markov chains in general state spaces. Proofs are rigorous and concise, the range of applications is broad and knowledgeable, and key ideas are accessible to practitioners with limited mathematical background. New commentary by Sean Meyn, including updated references, reflects developments since 1996. This book discusses supply chain management, focusing on developments within modelling the dynamic behaviour of the supply chain. Aimed at postgraduate students, researchers and practitioners, this book provides an in-depth knowledge of the dynamics of supply chains. Business trends such as the globalisation process and the increase of competition across many industrial sectors have forced companies to concentrate on their core competences and to outsource those activities in which they do not excel. As a consequence, companies no longer produce and distribute their goods in isolation, but being part of a supply chain or supply network, i.e. a set of interrelated companies who ultimately deliver the goods and services to the final customer. Despite the prevalence of supply chains as the primary form of production and distribution, their performance can be seriously hampered by the complex dynamics resulting from the collaboration and coordination (or lack thereof) among their members. This book provides the reader with modelling tools to understand, analyse and improve the dynamic behaviour of supply chains. It assembles seminal works on supply chain models and recent developments on the topic in order to provide a comprehensive, unified vision of the field for researchers and practitioners who wish to grasp the challenges of supply chain management. Aside presenting the main elements, equations and performance indicators governing the dynamics of a supply chain, and the book addresses issues such as the effect of timely and accurately sharing the information across members, the influence of restrictions on the productive capacities of their members, or the impact of the variability of the lead times, among others. Furthermore, more complex supply chain structures such as non-serial supply networks or closed-loop supply chains are modelled and discussed. Relevant managerial insights regarding the causes of supply chain underperformance, as well as avenues to improve their efficiency can be extracted from the resulting models.

- [Markov Chains](#)
- [Sustainable Supply Chains](#)
- [Next Generation Supply Chains](#)
- [Markov Chains](#)
- [Guide To Supply Chain Management](#)
- [Approximate Quantum Markov Chains](#)
- [Global Supply Chain And Operations Management](#)
- [Understanding Markov Chains](#)
- [Pharmaceutical Supply Chains Medicines Shortages](#)
- [Continuous Time Markov Chains](#)
- [Markov Chains With Stationary Transition Probabilities](#)
- [Networks Against Time](#)
- [Sharing Economy](#)
- [Supply Chain Finance Solutions](#)
- [Chains Of Gold](#)
- [Sustainable Global Value Chains](#)
- [Advanced Planning In Supply Chains](#)
- [Africa And Sustainable Global Value Chains](#)
- [Environmentally Responsible Supply Chains](#)
- [Strategic Supply Chain Management](#)
- [Agricultural Value Chains In India](#)
- [Markov Chains And Stochastic Stability](#)
- [Analysis And Algorithms For Service Parts Supply Chains](#)
- [Introduction To Markov Chains](#)
- [Non negative Matrices And Markov Chains](#)
- [Supply Chain Engineering](#)
- [Springer Handbook Of Mechanical Engineering](#)
- [Cross Chain Collaboration In Logistics](#)
- [Kuranishi Structures And Virtual Fundamental Chains](#)
- [Designing Value Creating Supply Chain Networks](#)
- [Environmental Sustainability In Asian Logistics And Supply Chains](#)
- [Springer Handbook Of Nanotechnology](#)
- [A Theory Of Supply Chains](#)
- [Springer Handbook Of Ocean Engineering](#)
- [Supply Chain Resilience](#)
- [Supply Chain Finance](#)
- [Modelling Supply Chain Dynamics](#)
- [Springer Handbook Of Surface Science](#)
- [Managing Supply Chain Risk](#)
- [Springer Handbook Of Glass](#)