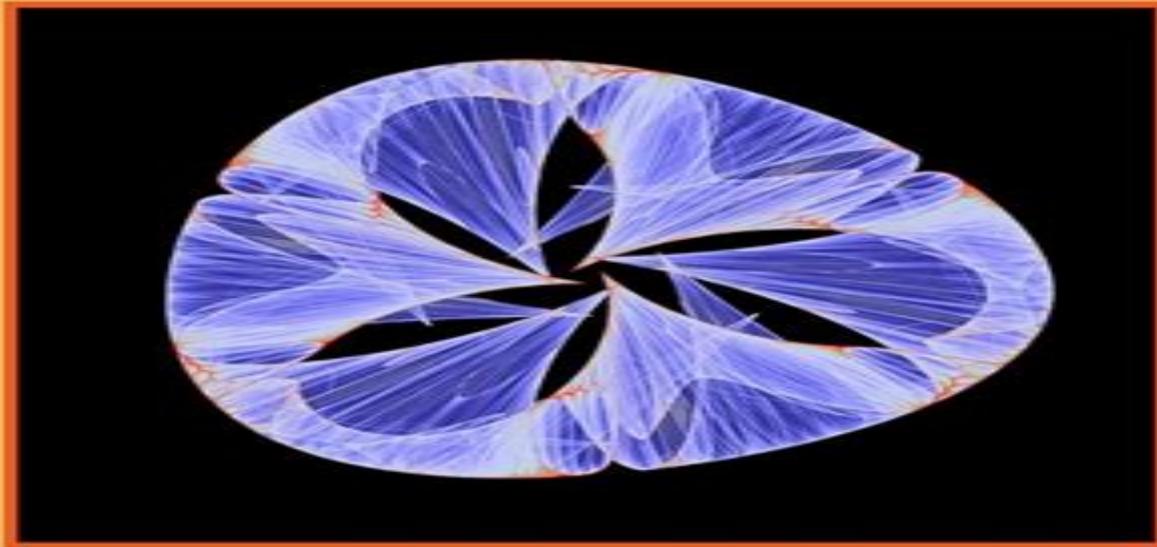


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With Applications to
Physics, Biology, Chemistry, and Engineering



Steven H. Strogatz

Third Edition

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Understanding The Physics Of Toys: Principles, Theory And Exercises S Rajasekar,R Velusamy,Miguel A F Sanjuan,2023-02-21 Demonstrating many fundamental concepts of physics and engineering through the working principles of popular science toys is inexpensive quickly reaching the senses and inspiring a better learning The systematic way of setting theoretical model equations for the toys provides a remarkable experience in constructing model equations for physical and engineering systems Given that most science toys are based on the principles of physics and to cater to the needs of graduate and master level programme

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Exploring ODEs Lloyd N. Trefethen, Asgeir Birkisson, Tobin A. Driscoll, 2017-12-21 Exploring ODEs is a textbook of ordinary differential equations for advanced undergraduates graduate students scientists and engineers It is unlike other books in this field in that each concept is illustrated numerically via a few lines of Chebfun code There are about 400 computer generated figures in all and Appendix B presents 100 more examples as templates for further exploration

Mathematical Oncology Mark A. J. Chaplain, Luigi Preziosi, 2026-01-01 Cancer is a complex and devastating disease responsible for millions of deaths worldwide each year While traditional oncology focuses on diagnosis and treatment through medical surgical radiation and clinical techniques mathematical oncology has emerged as a powerful discipline that applies mathematical modelling to understand cancer growth spread and response to treatment This volume provides a comprehensive exploration of mathematical approaches in oncology offering a deep dive into differential equation models and biomechanical models From reaction diffusion equations that capture tumour growth and spread to mechanical models that examine cellular interactions within tissues and vessels this book presents both analytical techniques and computational modelling approaches that enhance our understanding of cancer dynamics This book serves as both a reference for researchers and a foundation for integrating mathematical oncology into university curricula By bridging the gap between mathematics biology and clinical research it highlights the crucial role of mathematical modelling in advancing cancer treatment strategies and improving patient outcomes

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Structural Theories for Dynamical Networks in Biology Atsushi Mochizuki, 2025-06-21 This textbook provides an introduction to theoretical biology using specific topics and explains the main mathematical methods The book also introduces the structural theories developed by the author and his colleagues as new theoretical methods Structural theories are mathematical theories that determine key aspects of the behavior of dynamical systems from network information alone The book details the practical applications of these methods across several biological network systems and shows that they are practically useful for analyzing the behaviors of biological systems The first half of the book focuses on the dynamics that arise from the regulation of biomolecular activity such as gene expression and protein modification The second half of the book approaches the understanding of the dynamics of complex systems composed of many biomolecules Each chapter

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Interactive Differential Equations Workbook Beverly Henderson West,1997 Accompanies a CD ROM containing over 90 tools and applications of differential equations drawn from engineering physics chemistry and biology Covers first and second order differential equations linear and nonlinear systems Laplace transforms and series solutions

Choice ,1996

Nonlinear Dynamics and Chaos Steven H. Strogatz,2007

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