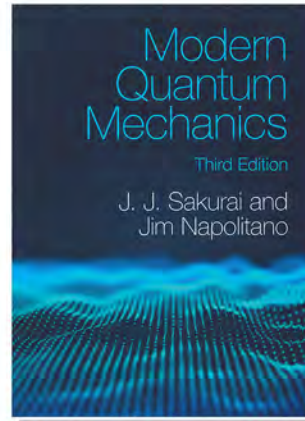


Cosmology's Century

P. J. E. Peebles

From Nobel Prize-winning physicist P. J. E. Peebles, the story of cosmology from Einstein to today. A monumental work, a landmark book, where one of the world's most esteemed theoretical cosmologists offers an unparalleled personal perspective on how the field developed.

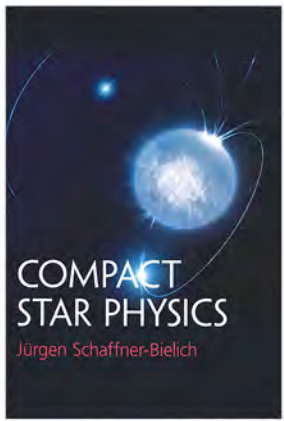


Modern Quantum Mechanics

Jun John Sakurai & Jim Napolitano

"A truly wonderful introduction to quantum mechanics. Sakurai's original text was elegant, simple, and full of insight. Napolitano's update adds context with applications from today's research, explained simply and beautifully. The problems are exceptionally well chosen."

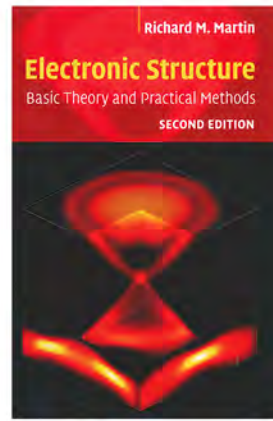
Kieron Burke
University of California-Irvine



Compact Star Physics

Jürgen Schaffner-Bielich

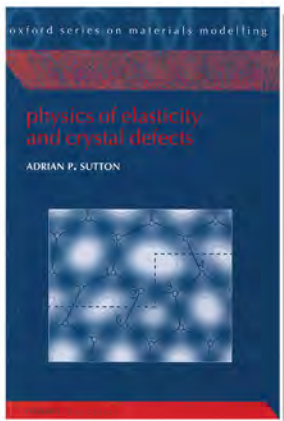
A self-contained introduction to compact star physics which explains important concepts from general relativity, thermodynamics, statistical mechanics, and nuclear physics. It also provides important insights on the basic concepts of compact stars, discusses white dwarfs, neutron stars, quark stars and exotic compact stars. **Target:** graduate students and researchers.



Electronic Structure

Richard M. Martin

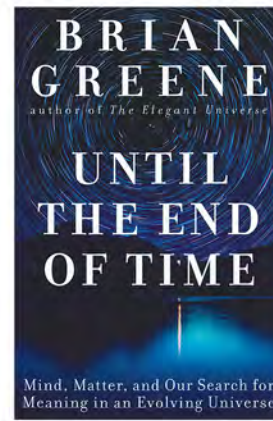
Electronic structure theory is now an integral part of research in physics, chemistry, materials science and other fields. This book provides a unified exposition of the theory and methods, with emphasis on understanding each essential component. Graduate students and research scientists will find careful explanations with references to original papers, pertinent reviews, and accessible books.



Physics of Elasticity and Crystal Defects

Adrian P. Sutton

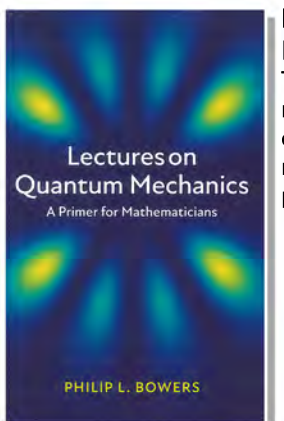
A modern take on an old subject at the heart of materials physics, this textbook introduces the concepts of elasticity in the traditional continuum way and also in terms of atomic interactions.



Until the End of Time

Brian Greene

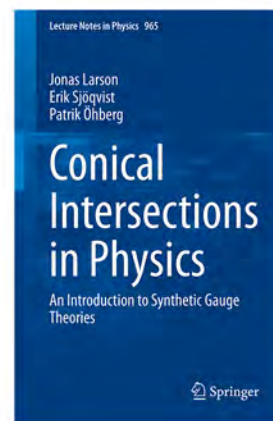
Greene takes us on a journey from the big bang to the end of time, exploring how lasting structures formed, how life and mind emerged, and how we grapple with our existence through narrative, myth, religion, creative expression, science, the quest for truth, and a deep longing for the eternal. A breathtaking new exploration of the cosmos and our quest to find meaning in the face of this vast expanse.



Lectures on Quantum Mechanics

Philip L. Bowers

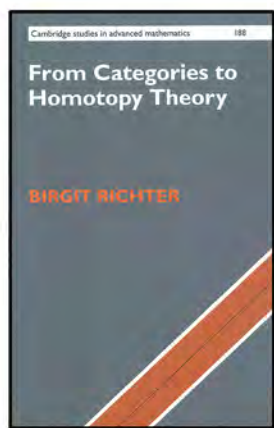
The book provides mathematicians and mathematics students with a very readable exposition of the subject, including the mathematical clarity missing from the physics textbooks.



Conical Intersections in Physics

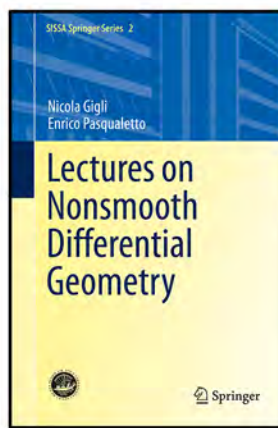
Jonas Larson, Erik Sjöqvist, Patrik Öhberg

The first primer on artificial gauge fields which contains both the fundamentals as well as all major applications to molecular systems, solid state physics and cold atoms.



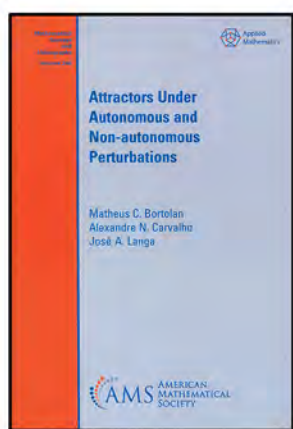
From Categories to Homotopy Theory Birgit Richter

Category theory provides structure for the mathematical world and is seen everywhere in modern mathematics. This book bridges the gap between pure category theory and its numerous applications in homotopy theory, providing the necessary background information. **Target:** graduate students or researchers with a background in algebraic topology and algebra.



Lectures on Nonsmooth Differential Geometry

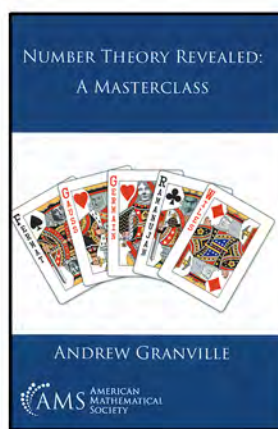
Nicola Gigli and Enrico Pasqualetto
An introduction to some aspects of the flourishing field of nonsmooth geometric analysis. In particular, a quite detailed account of the first-order structure of general metric measure spaces is presented, and the reader is introduced to the second-order calculus on spaces – known as RCD spaces – satisfying a synthetic lower Ricci curvature bound.



Attractors Under Autonomous and Non-autonomous Perturbations

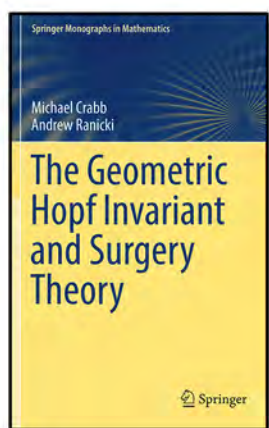
Matheus C. Bortolan, Alexandre N. Carvalho, José A. Langa

A comprehensive study of how attractors behave under perturbations for both autonomous and non-autonomous problems. **Target:** graduate students and researchers interested in dissipative dynamical systems and stability theory.



Number Theory Revealed Andrew Granville

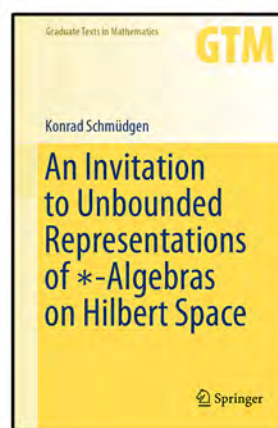
Ideal for instructors who wish to tailor a class to their own interests, the book gives well-prepared students further opportunities to challenge themselves and push beyond core number theory concepts, serving as a springboard to many current themes in mathematics.



The Geometric Hopf Invariant and Surgery Theory

Michael Crabb and Andrew Ranicki

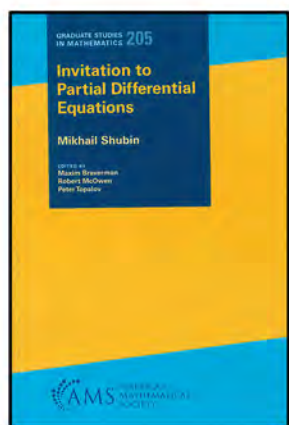
Aimed at graduate students and researchers interested in understanding how the algebraic and geometric topology fit together in the surgery theory of manifolds. This is the only book providing such a wide-ranging historical approach to the Hopf invariant, double points and surgery theory, with many results old and new.



An Invitation to Unbounded Representations of $*$ -Algebras on Hilbert Space

Konrad Schmüdgen

Making advanced material accessible to graduate students, this book will appeal to students and researchers interested in advanced functional analysis and mathematical physics. With its many exercises it can be used for courses on the representation theory of Lie groups and its application to quantum physics.

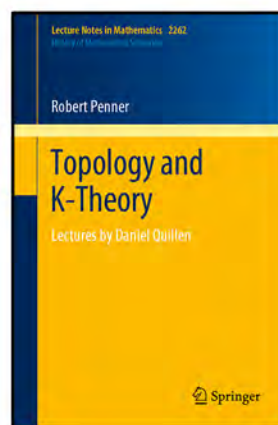


Invitation to Partial Differential Equations

Mikhail Shubin

“An excellent semester’s introduction to classical and modern topics in linear PDE, suitable for students with a background in advanced calculus and Lebesgue integration. The author intersperses treatments of the Laplace, heat, and wave equations with developments of various functional analytic tools.”

Michael Taylor
University of North Carolina



Topology and K-Theory: Lectures by Daniel Quillen

Robert Penner

Daniel Quillen, 1940–2011, Fields Medalist, transformed many aspects of algebra, geometry, and topology. Quillen created astonishing mathematics which continues to inspire current research in many fields. This book is an informal text for a second-semester graduate student, a potential preface to studying Quillen’s own landmark papers and an informal glimpse of his great mind.

new in the library

Other Fields - September-October 2020

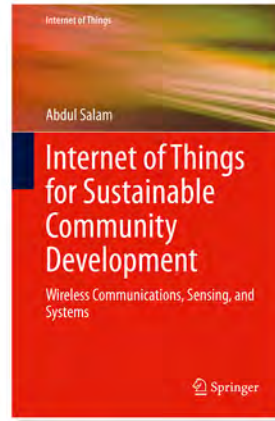


The Abdus Salam
International Centre
for Theoretical Physics



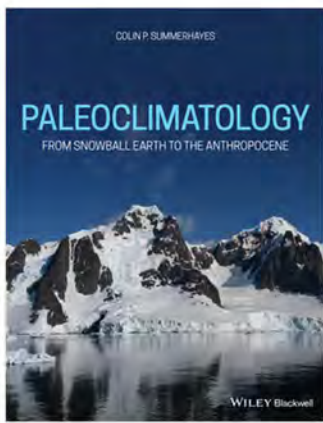
Essential Python for the Physicist Giovanni Moruzzi

A book of interest for a physicist or a natural-sciences student, introducing the reader with little or no previous computer-programming experience to the Python programming language and focusing on simple computer animation programs of physical interest.



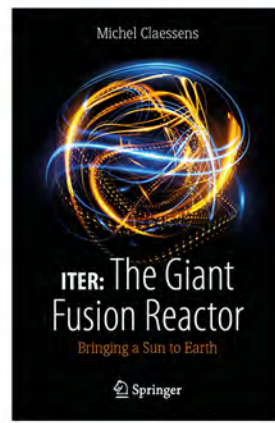
Internet of Things for Sustainable Community Development Abdul Salam

The book presents research of the sustainable IoT with respect to wireless communications, sensing, and systems and provides coverage of IoT technologies in sustainability, health, agriculture, climate change, mining, energy, water management, and forestry.



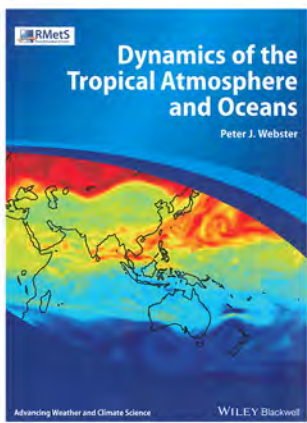
Paleoclimatology Colin P. Summerhayes

The author explains how we arrived at our current understanding of the climate system, by reviewing the contributions of scientists since the mid-1700s, showing how their ideas were modified as science progressed. Invaluable course reference for undergraduate and postgraduate students in geology, climatology, oceanography and the history of science.



ITER: The Giant Fusion Reactor Michel Claessens

Could hydrogen fusion be the answer to the growing demand for energy? A behind-the-scenes view into ITER – the world's biggest fusion reactor, discussing the challenges and opportunities of this potentially limitless green energy source.



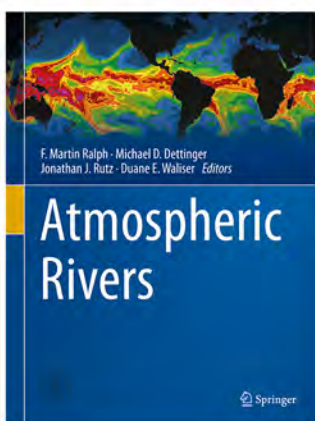
Dynamics of the Tropical Atmosphere and Oceans Peter J. Webster

A unique and comprehensive view of the fundamental dynamical and thermodynamic principles underlying the large circulations of the coupled ocean-atmosphere system. Aimed at advanced undergraduate and early career graduate students, it also serves as an excellent general reference book for scientists interested in tropical circulations and their relationship with the broader climate system.



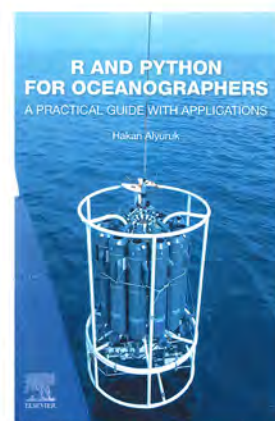
Use Your Difference to Make a Difference Tayo Rockson

A book on "How to connect and communicate in a cross cultural world"



Atmospheric Rivers F. Martin Ralph, Michael D. Dettinger, Jonathan J. Rutz, Duane E. Waliser, editors

Presents the latest research on a highly impactful extreme weather phenomenon with climatological importance both regionally and globally, and that has bearing on a variety of civil and commercial decision support areas.



R and Python for Oceanographers Hakan Alyuruk

A description of much needed oceanographic data analysis approaches to chemical and physical oceanography, including examples with software applications based on Python and R.