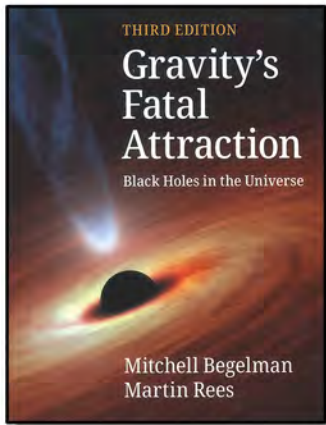


new in the library

Physics - November-December 2020

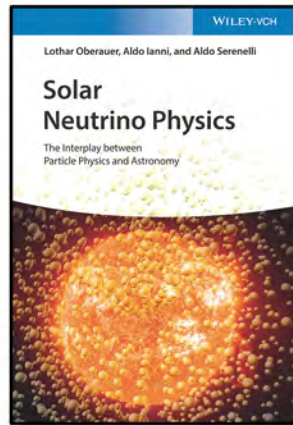


The Abdus Salam
International Centre
for Theoretical Physics



Gravity's Fatal Attraction Mitchell C. Begelman & Martin Rees

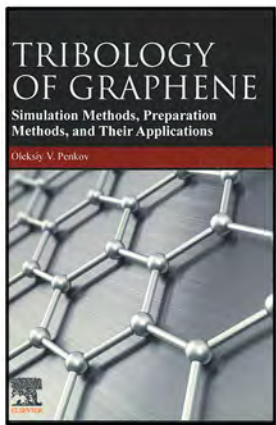
"A remarkably readable exposition of nature's most exotic objects by two of the world's leading astrophysicists. It brings the reader up to the frontiers of the field, including discussions of the gravitational waves that we have now observed from merging black holes, as well as the remarkable advancements in event horizon imaging."
Christopher Reynolds, University of Cambridge



Solar Neutrino Physics

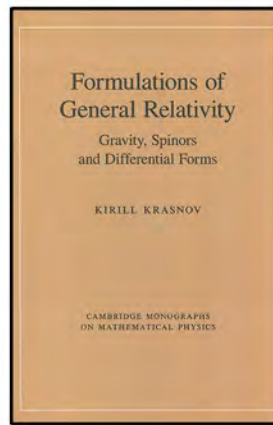
Lothar Oberauer, Aldo Ianni, Aldo Serenelli

Written for astronomers, physicists, and high energy physicists, a guide to the fascinating interplay between particle physics and astrophysics that highlights the discovery of neutrino oscillations and combines the theory of nuclear reactions with solar neutrino experiments.



Tribology of Graphene Oleksiy V. Penkov

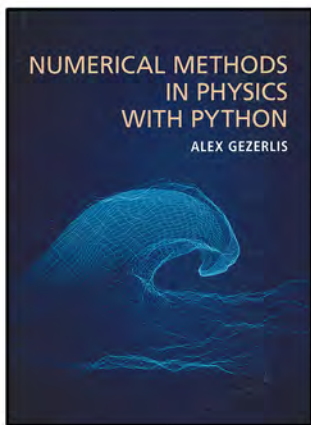
A syntheses of the broad current research in tribological applications of graphene all in one place that covers theoretical simulations and preparation methods, allowing for quicker and more effective selection of graphene-based material.



Formulations of General Relativity Kirill Krasnov

A valuable insight into the very nature of gravity which describes the different formulations of Einstein's General Theory of Relativity.

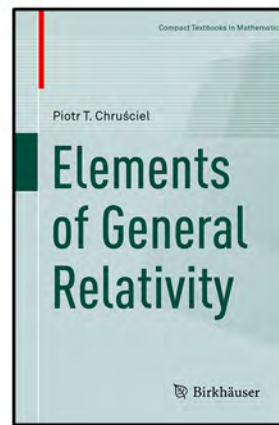
Target: graduate students and researchers in the fields of theoretical physics and differential geometry.



Numerical Methods in Physics with Python Alex Gezerlis

"Written by a leading expert in computational physics, this outstanding textbook is unique in that it focuses on teaching basic numerical methods while also including a number of modern numerical techniques that are usually not covered in computational physics textbooks."

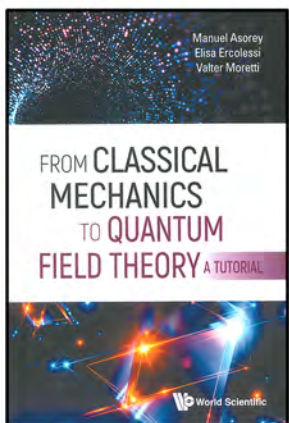
Yoram Alhassid, Yale University



Elements of General Relativity Piotr T. Chruściel

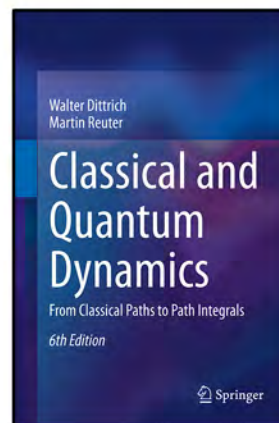
An introduction to the mathematics and physics of general relativity offering the most striking aspects of Einstein's theory of gravitation: black holes, gravitational waves, stellar models, and cosmology.

Target: graduate students acquainted with special relativity.



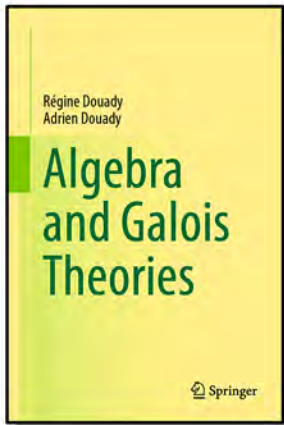
From Classical Mechanics to Quantum Field Theory, A Tutorial Manuel Asorey, Elisa Ercolessi, Valter Moretti

A collection of lectures delivered by the authors at the Fall Workshops on Geometry and Physics from 2014 to 2016 which aims to fill the gap between the more physical-oriented and the more mathematical-oriented literature on quantum theory.

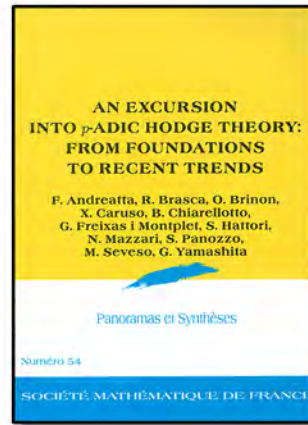


Classical and Quantum Dynamics Walter Dittrich, Martin Reuter

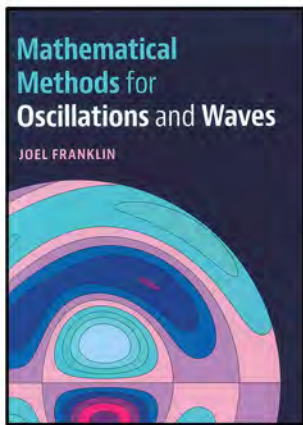
This textbook in its 6th edition contains both the fundamentals and a detailed treatment of some remarkable topics of quantum mechanics. It includes an introduction to Riemann's (Einstein's) ideas on space and time and their philosophical implications. Addressed to graduate students seeking to become familiar with advanced computational strategies in classical and quantum dynamics.



Algebra and Galois Theories
Régine Douady & Adrien Douady
This book aims to transfer geometric intuition to the algebraic framework of Galois theory, giving a parallel presentation of Galois theory and the theory of covering spaces and highlighting this similarity between the two.
Target: graduate students and mathematicians curious about a non-exclusively algebraic view of Galois theory.

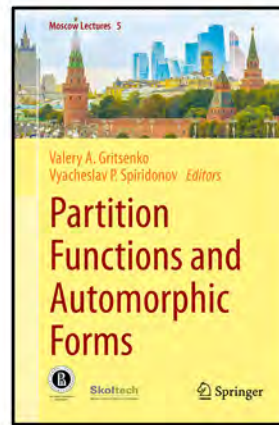


An Excursion into p-Adic Hodge Theory
Fabrizio Andreatta et al.
A progressive and comprehensive introduction to p-adic Hodge theory which starts with Tate's works on p-adic divisible groups and the cohomology of p-adic varieties and then moves smoothly to the construction of Fontaine's p-adic period rings and their apparition in several comparison theorems between various p-adic cohomologies.

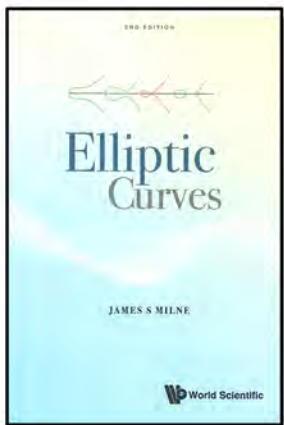


Mathematical Methods for Oscillations and Waves
Joel Franklin
"A lively, efficient introduction to the mathematical methods of the harmonic oscillator and wave equations".
D. P. Turner, Choice.

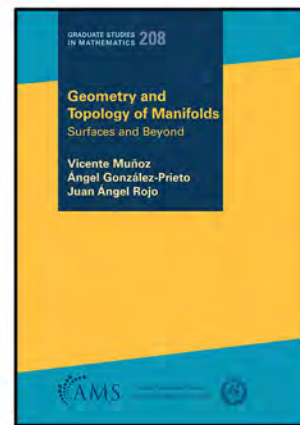
Physics, mathematics and engineering students will find 300 problems treated in a sophisticated manner. The insights emerging from Franklin's treatment make it a valuable teaching resource.



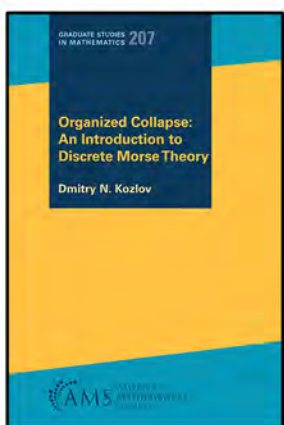
Partition Functions and Automorphic Forms
Valery A. Gritsenko & Vyacheslav P. Spiridonov, editors
Intended for graduate students and young postdocs interested in the interaction between quantum field theory and mathematics related to automorphic forms, this book offers an introduction to the research in several recently discovered and actively developing mathematical and mathematical physics areas.



Elliptic Curves
James S. Milne
His book uses the beautiful theory of elliptic curves to introduce the reader to some of the deeper aspects of number theory. It assumes only a knowledge of the basic algebra, complex analysis, and topology usually taught in first-year graduate courses.



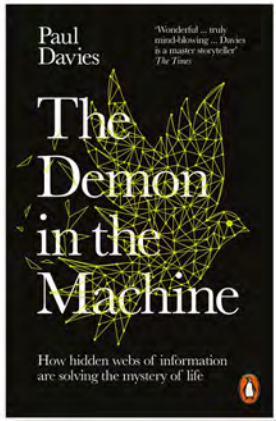
Geometry and Topology of Manifolds
Vicente Muñoz, Ángel González-Prieto, Juan Ángel Rojo
Get a new perspective on differential topology. Primarily addressed to graduate students without standard introductory courses on algebraic topology, it mainly focuses on the classification of manifolds, with special attention to the case of surfaces.



Organized Collapse
Dmitry N. Kozlov
The present book provides a gentle introduction into the beauty of discrete Morse theory, which, within applied topology, came into light as one of the main tools to understand cell complexes arising in different contexts, as well as to reduce the complexity of homology calculations.



Kuranishi Structures and Virtual Fundamental Chains
Kenji Fukaya, Yong-Geun Oh, Hiroshi Ohta, Kaoru Ono
A detailed, self-contained explanation of the theory of Kuranishi structures. The first book to provide a foundation of techniques of virtual fundamental chain by the originators of the theory.

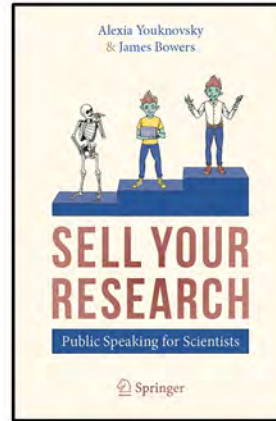


The Demon in the Machine

Paul Davies

"Paul Davies always probes the deepest questions in science. Here, addressing the deepest of all - Schrödinger's What is Life? - he tells us what life is: matter plus information beyond the laws of physics, but compatible with them. To elaborate this thesis, he deploys his trademark talent: getting to the heart of the most abstruse and technical aspects of science (biology as well as physics), without jargon and with down-to-earth analogies"

Sir Michael Berry

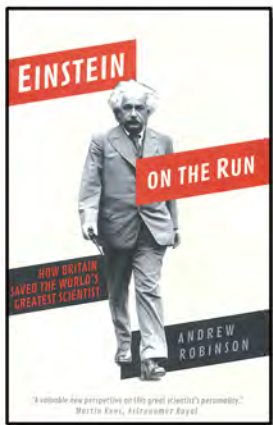


Sell Your Research

Alexia Youknovsky
& James Bowers

"For scientists these days, the work is not done until it is communicated. And now that problem is solved. Solidly researched and immaculately written, this book is a goldmine of useful advice."

Stephen Webster,
Science Communication Unit,
Imperial College London

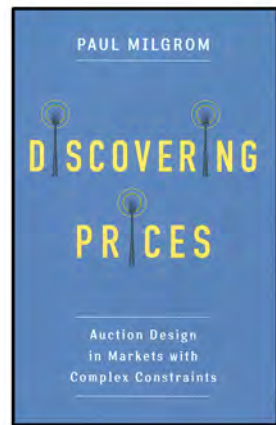


Einstein on the Run

Andrew Robinson

"This jewel of a book, to be read by anyone interested in Albert Einstein, his science, his peripatetic existence, his joys and travails. Einstein here is seen as navigating a ship across turbulent seas, often subject to forces beyond his control, yet steering with determination into the storms of scientific inquiry."

Diana K. Buchwald

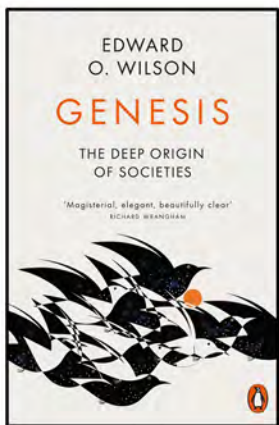


Discovering Prices

Paul Milgrom

"With deep theoretical insights and broad practical experience, the author presents a systematic analysis of the challenges of pricing in complex resource-allocation problems, and in doing so he helps us to better understand the foundations of price theory in economics."

Roger Myerson,
Nobel Laureate in Economics

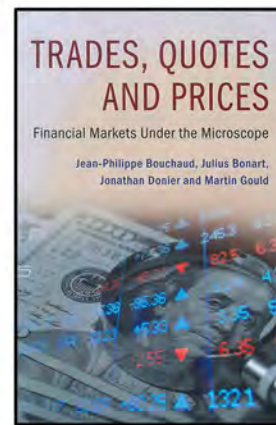


Genesis: The Deep Origin of Societies

Edward O. Wilson

"In his characteristically clear, succinct and elegant prose, one of our grand masters of synthesis, E. O. Wilson, here explains no less than the origin of human society."

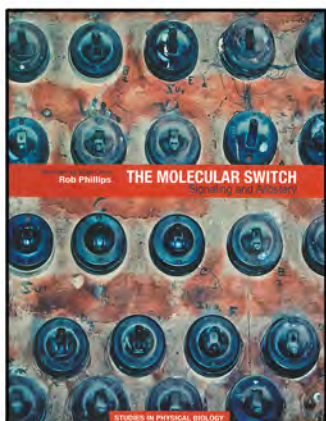
Richard Rhodes, Pulitzer Prize winner



Trades, Quotes and Prices

Jean-Philippe Bouchaud, Julius Bonart,
Jonathan Donier, Martin Gould

"Financial markets under the microscope". Get involved in the authors' discussion on empirical facts of financial markets and enjoy this masterful overview of the modern and rapidly developing field of market microstructure.

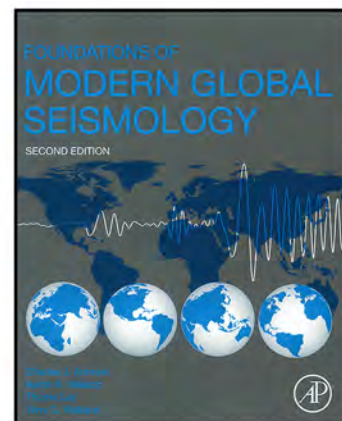


The Molecular Switch

Rob Phillips

"Rob Phillips conveys with clarity and precision the physicists' deep belief in universality, providing a consistent set of ideas, methods, and examples that are applied across a range of molecular biology."

Jeremy Gunawardena,
Harvard Medical School



Foundations of Modern Global Seismology

Charles Ammon, Aaron Velasco,
Thorne Lay, Terry Wallace

A complete, self-contained primer on seismology, emphasizing the fundamental theories and physics governing seismic waves. The text provides a unique perspective on Earth's large-scale internal structure and dynamic processes.