

E310606

最新 物理学タイトル
(書名順)(2019-1)

No.P06-1 【分散関係の簡単な入門：現代の応用】

Oller, José Antonio

A Brief Introduction to Dispersion Relations: With Modern Applications**(SpringerBriefs in Physics)** (Springer) 4/2019 Paperback 141 ㊦

ISBN 9783030135812 ¥8,690

このテキストでは、S 行列要素を計算するための

アプローチとして、分散関係について簡単に紹介します。

No.P06-2 【生体吸収性複合材料分解の現象論的数学モデリングフレームワーク】

Moreno-gomez, Ismael

A Phenomenological Mathematical Modelling Framework for the Degradation of Bioresorbable Composites (Springer) 4/2019 Hardcover 325 ㊦

ISBN 9783030049898 ¥33,260

この本は、分解の間に存在する織り交ぜられた現象を

表すために分析式を使って、吸収性複合材料の分解のための一般化された計算モデルを提示します。

No.P06-3 【物理学を超えた世界：生命の出現と進化】

Tsukerman, Igor

A World Beyond Physics: The Emergence and Evolution of Life

(Oxford Univ. Press) 5/2019 Hardcover 168 ㊦ ISBN 9780190871338 ¥3,770

How did life start? Is the evolution of life describable by any physics-like laws? Stuart Kauffman's latest book offers an explanation-beyond what the laws of physics can explain-of the progression from a complex chemical environment to molecular reproduction, metabolism and to early protocells, and further evolution to what we recognize as life.

No.P06-4 【個人および環境保護のための加速器放射線物理】

Cossairt, J. Donald/Quinn, Matthew

Accelerator Radiation Physics for Personnel and Environmental Protection

(CRC Press) 5/2019 Hardcover 322 ㊦ ISBN 9781138589018 ¥28,720

過去 50 年間にわたって行われてきた加速器技術の飛躍的な進歩に合わせて重要なリソースを提供する。

No.P06-5 【量子世界での冒険】

Kastner, Ruth E.

Adventures In Quantumland: Exploring Our Unseen Reality (World Scientific Pub.)

4/2019 Hardcover 352 ㊦ ISBN 9781786346414 ¥10,280 一般的な読者を対象

としていますが、物理学の学生や研究者向けのより高度な資料やテクニカルリファレンスの付録など、量子論の完全相対論的で現実的な解釈としての量子論のトランザクション解釈の基礎を概説します。

No.P06-6 【シンクロトロン放射入門：技法と応用、第2版】

Willmott, Philip

An Introduction to Synchrotron Radiation: Techniques and Applications,**2nd Edition** (Wiley) 4/2019 Paperback 504 ㊦ ISBN 9781119280392 ¥18,900

シンクロトロン放射の基本概念、技術および応用、ならびにこの急速に発展している分野におけるその応用に関する最新ガイド

No.P06-7 【厳密な場の量子論における応用、第2版】

Hiroshima, Fumio/Lörinczi, József

Applications in Rigorous Quantum Field Theory, 2nd edition (De Gruyter Studies in Mathematics, 34/2) (Walter de Gruyter) 7/2019 Hardcover 400 ㇰ

ISBN 9783110403503 ¥22,680

This is the second updated and extended edition of the successful book on Feynman-Kac theory.

No.P06-8 【材料加工へのプラズマ技術の応用】

Speranza, Giorgio/ Liu, Wei/ Minati, Luca

Applications of Plasma Technologies to Material Processing

(CRC Press) 4/2019 Hardcover 127 ㇰ ISBN 9780367209803 ¥9,820

No.P06-9 【天文学的分光法、第3版】

Tennyson, Jonathan

Astronomical Spectroscopy: An Introduction To The Atomic And Molecular Physics Of Astronomical Spectroscopy, 3rd Edition (Advanced Textbooks in Physics)

(World Scientific Pub.) 7/2019 Hardcover 284 ㇰ ISBN 9781786346940 ¥13,300

The third edition of Astronomical Spectroscopy examines the physics necessary to understand and interpret astronomical spectra.

No.P06-10 【アトラス：Lhc 実験の25年のインサイダー物語】

Jenni, Peter

Atlas: A 25-year Insider Story Of The Lhc Experiment (Advanced Series On Directions In High Energy Physics) (World Scientific Pub.) 7/2019 Hardcover 372 ㇰ

ISBN 9789813271791 ¥8,760

This book is written by the ATLAS Collaboration at CERN's Large Hadron Collider (LHC), to document and reflect on its more than 25 years of history. It covers all aspects of this global science project at the forefront of particle physics.

No.P06-11 【チェレンコフ反射】

Fegan, David

Cherenkov Reflections: Gamma-ray Imaging And The Evolution Of Tev Astronomy

(World Scientific Pub.) 7/2019 Hardcover 300 ㇰ ISBN 9789813276857 ¥17,840

This book documents how TeV gamma-ray astronomy painstakingly emerged from 20th century traditional cosmic-ray physics to become, in time, a keystone feature of contemporary high-energy astrophysics that is central to our understanding of high-energy processes and interactions in the cosmos, linking traditional particle physics to a multitude of astrophysical phenomena.

No.P06-12 【古典場の理論】

Nastase, Horatiu

Classical Field Theory (Cambridge Univ. Press) 4/2019 Hardcover

480 ㇰ ISBN 9781108477017 ¥12,090

Classical field theory predicts how physical fields interact with matter, and is a logical precursor to quantum field theory.

No.P06-13 【古典場の理論：電気力学、非アーベルゲージ理論と重力、第2版】

Scheck, Florian

Classical Field Theory: On Electrodynamics, Non-Abelian Gauge Theories and Gravitation, 2nd Edition (Graduate Texts in Physics) (Springer) 4/2019

Paperback 464 ㇰ ISBN 9783662585610 ¥16,470 Scheck's successful

textbook presents a comprehensive treatment, ideally suited for a one-semester course.

No.P06-14 【宇宙の発見】

Harwit, Martin

Cosmic Discovery: The Search, Scope, and Heritage of Astronomy

(Cambridge Univ. Press) 5/2019 Paperback 370 ㇰ ISBN 9781108722049 ¥6,800

Martin Harwit's influential book, Cosmic Discovery, is rereleased after more than thirty-five years, with a new preface written by the author.

No.P06-15 【宇宙論とストリング理論】

Nastase, Horatiu

Cosmology and String Theory

(Springer) 4/2019 Hardcover 462 ㇰ

ISBN 9783030150761 ¥21,160 This book describes the best current

avenues for obtaining cosmology from string theory. It is aimed at graduate students, and also researchers, with some familiarity with cosmology and string theory, however no detailed knowledge is required.

No.P06-16 【超音波診断装置：物理学および装置、第3版】

Hoskins, Peter R./ Martin, Kevin/ Thrush, Abigail

Diagnostic Ultrasound: Physics and Equipment, 3rd Edition

(CRC Press)

5/2019 Hardcover 399 ㇰ ISBN 9780367190415 ¥37,790

This popular text provides a comprehensive, yet accessible, introduction to the physics and technology of medical ultrasound, with high quality ultrasound images and diagrams throughout.

No.P06-17 【電気力学と光学（物理学における大学院講義ノート）】

Demtröder, Wolfgang

Electrodynamics and Optics (Undergraduate Lecture Notes in Physics)

(Springer) 7/2019 Hardcover 901 ㇰ ISBN 9783030022891 ¥11,330

This engaging text offers an accessible and clear treatment of the fundamentals of electromagnetics and optics, a core part of the standard undergraduate physics curriculum.

No.P06-18 【電磁異方性と双異方性：フィールドガイド、第2版】

Mackay, Tom G./ Lakhtakia, Akhlesh

Electromagnetic Anisotropy and Bianisotropy: A Field Guide, 2nd Edition

(World Scientific Pub.) 4/2019 Hardcover 290 ㇰ ISBN 9789811203138 ¥14,810

この本の目的は、古典的な教科書に見られる結晶光学の標準的な扱い方を拡張し更新することです。それは電磁異方性、二等方性、およびキラリティーの広い概説を提供します。

No.P06-19 【電磁地球物理学的分野：地震と津波の前兆、脳と心臓への影響】

Ershov, Sergey/ Novik, Oleg/ Smirnov, Feodor/ Volgin, Maxim

Electromagnetic Geophysical Fields: Precursors to Earthquakes and Tsunamis, Impact on the Brain and Heart

(Springer) 5/2019 Hardcover 225 ㇰ

ISBN 9783319984605 ¥22,680 This book develops the theory of

electromagnetic (EM) precursors to seaquakes (i.e. underwater earthquakes) and tsunamis, including the sequential stages of the transformation of a weak seismic mechanical excitation of the sea bottom into EM signals in the atmosphere.

No.P06-20 【固体中の電子】

M. Morgenstern/H. Bluhm/C. Stampfer/G. Plessen/T. Brückel

Electrons in Solids: Mesoscopics, Photonics, Quantum Computing, Correlations, Topology (Graduate Texts in Condensed Matter)

(Walter de Gruyter) 4/2019

Paperback 405 ㇰ ISBN 9783110438314 ¥10,430 As a continuation

of classical condensed matter physics texts, this graduate textbook introduces advanced topics of correlated electron systems, mesoscopic transport, quantum computing, optical excitations and topological insulators. The book is focusing on an intuitive understanding of the basic concepts of these rather complex subjects.

No.P06-21 【素粒子物理学】

Larkoski, Andrew J.

Elementary Particle Physics: An Intuitive Introduction

(Cambridge Univ. Press) 7/2019 Hardcover 506 頁 ISBN 9781108496988 ¥9,070 This modern introduction to particle physics equips students with the skills needed to develop a deep and intuitive understanding of the physical theory underpinning contemporary experimental results.

No.P06-22 【偽の物理学：なりすまし、デマ情報と架空の科学】

May, Andrew

Fake Physics: Spoofs, Hoaxes and Fictitious Science (Springer) 4/2019

Paperback 180 頁 ISBN 9783030133139 ¥4,230 People are used to seeing “fake physics” in science fiction – concepts like faster-than-light travel, antigravity and time travel to name a few.

No.P06-23 【フィールド解析と電磁気学】

Javid, Mansour/ Brown, Philip Marshall

Field Analysis & Electromagnetics (Dover Pubns) 5/2019 Paperback

544 頁 ISBN 9780486832821 ¥4,980 Intended for advanced undergraduates and graduate students in electrical engineering and physics, this text presents a science-oriented, mathematically complete, and unified approach to the study of field theory and electromagnetics.

No.P06-24 【最初のブラックホールの形成】

Schleicher, Dominik/Latif, Muhammad

Formation of The First Black Holes (World Scientific Pub.) 4/2019 Hardcover

260 頁 ISBN 9789813227941 ¥14,810

The formation of the first supermassive black holes is one of the main open questions in our understanding of high-redshift structure formation. In this book, we aim to provide a summary of state-of-the-art modern research on this topic, exploring the formation of massive black holes from a fluid-dynamical, stellar-dynamical and chemical perspective.

No.P06-25 【固体物理学の基礎：次元性と対称性】

Roth, Siegmund/ Carroll, David

Foundations of Solid State Physics: Dimensionality and Symmetry

(Wiley-VCH) 5/2019 Hardcover 592 頁 ISBN 9783527345045 ¥22,680

Foundations of Solid State Physics introduces the essential topics of solid state physics as taught globally with a focus on understanding the properties of solids from the viewpoint of dimensionality and symmetry.

No.P06-26 【原子からヒッグス粒子：準時空での航海】

Rangacharyulu, Chary/ Polachic, Christopher J. A.

From Atoms to Higgs Bosons: Voyages in Quasi Space-time

(Jenny Stanford Pub) 4/2019 Hardcover 400 頁 ISBN 9789814800242 ¥15,110

For millennia, natural philosophers and scientists have been actively engaged in the reductionist quest to specify the fundamental building blocks of matter and discern the dynamics of physical reality.

No.P06-27 【古典場の理論から摂動量子場の理論】

Dütsch, Michael

From Classical Field Theory to Perturbative Quantum Field Theory

(Birkhauser) 4/2019 Hardcover 536 頁 ISBN 9783030047375 ¥21,160

This book develops a novel approach to perturbative quantum field theory: starting with a perturbative formulation of classical field theory, quantization is achieved by means of deformation quantization of the underlying free theory and by applying the principle that as much of the classical structure as possible should be maintained.

No.P06-28 【ハドロン物理学における機能解析と最適化手法】

Caprini, Irinel

Functional Analysis and Optimization Methods in Hadron Physics (SpringerBriefs in Physics) (Springer) 6/2019 Paperback 140 頁 ISBN 9783030189471 ¥9,070

This book begins with a brief historical review of the early applications of standard dispersion relations in particle physics. It then presents the modern perspective within the Standard Model, emphasizing the relation of analyticity together with alternative tools applied to strong interactions, such as perturbative and lattice quantum chromodynamics (QCD), as well as chiral perturbation theory.

No.P06-29 【銀河のダイナミクス、形成と進化の基礎】

Ferreras, Ignacio

Fundamentals of Galaxy Dynamics, Formation and Evolution (UCL Press)
10/2019 Hardcover 200 頁 ISBN 9781911307631 ¥9,820

Ignacio Ferreras presents a concise introduction to extragalactic astrophysics, with an emphasis on stellar dynamics and the growth of density fluctuations in an expanding universe. Additional chapters are devoted to smaller systems (stellar clusters) and larger ones (galaxy clusters).

No.P06-30 【電波天文学の基礎：観測方法と天体物理学 - 全2巻】

Marr, Jonathan/Snell, Ronald L./Kurtz, Stanley E.

Fundamentals of Radio Astronomy: Observational Methods and Astrophysics - Two Volume Set (Series in Astronomy and Astrophysics) (CRC Press) 5/2019
Hardcover 700 頁 ISBN 9781498725811 ¥33,260

This two-volume set of introductory textbooks is exclusively devoted to radio astronomy, with extensive discussions of telescopes, observation methods, and astrophysical processes that are relevant for this exciting field.

No.P06-31 【ベクトルの幾何学的乗算：物理学における幾何代数の序論】

Josipović, Miroslav

Geometric Multiplication of Vectors: An Introduction to Geometric Algebra in Physics (Compact Textbooks in Mathematics) (Birkhauser) 7/2019
Paperback 254 頁 ISBN 9783030017552 ¥7,550

This book enables the reader to discover elementary concepts of geometric algebra and its applications with lucid and direct explanations.

No.P06-32 【MATLAB を使ったハンスオン加速器物理】

Ziemann, Volker

Hands-on Accelerator Physics Using MATLAB (CRC Press) 4/2019 Hardcover
372 頁 ISBN 9781138589940 ¥19,640

Hands-On Accelerator Physics Using MATLAB® provides an introduction into the design and operational issues of a wide range of particle accelerators, from ion-implanters to the Large Hadron Collider at CERN. Many aspects from the design of beam optical systems and magnets, to the subsystems for acceleration, beam diagnostics, and vacuum are covered.

No.P06-33 【統合マルチフェロイックヘテロ構造とその応用】

Liu, Ming/ Zhou, Ziyao

Integrated Multiferroic Heterostructures and Applications (Wiley-VCH)
5/2019 Hardcover 264 頁 ISBN 9783527341771 ¥24,940

Written by well-known experts in the field, this first systematic overview of multiferroic heterostructures summarizes the latest developments, first presenting the fundamental mechanisms, including multiferroic materials synthesis, structures and mechanisms, before going on to look at device applications.

No.P06-34 【星座入門：形成、構造、そして進化】

Beech, Martin

Introducing the Stars: Formation, Structure and Evolution (Springer)

5/2019 Paperback 276 ㄱ ISBN 9783030117030 ¥7,560

The resulting text offers insight and understanding for scientists and students new to this area.

No.P06-35 【制御ソース電磁法入門】

Ziolkowski, Anton/ Slob, Evert

Introduction to Controlled-Source Electromagnetic Methods: Detecting Subsurface

Fluids (Cambridge Univ. Press) 4/2019 Hardcover 332 ㄱ ISBN 9781107058620

¥19,650 This volume describes how controlled-source electromagnetic (CSEM)

methods are used to determine the electrical conductivity and hydrocarbon content of the upper few kilometres of the Earth, on land and at sea.

No.P06-36 【シンプレクティック幾何学入門】

Koszul, Jean-louis/ Zou, Yiming

Introduction to Symplectic Geometry (Springer) 4/2019 Hardcover 121 ㄱ

ISBN 9789811339868 ¥11,340 This introductory book offers a unique and unified

overview of symplectic geometry, highlighting the differential properties of symplectic manifolds.

No.P06-37 【国際宇宙ステーションへの日本のミッション】

Japanese Missions to the International Space Station: Hope from the East

(Springer) 4/2019 Paperback 336 ㄱ ISBN 9783030045333 ¥5,290

Japan has a rich history of human spaceflight, flying in space with both NASA and the Soviet/Russian space agencies over the years. This book tells the story of the JAXA astronauts who have visited the International Space Station and how they have lived on board, helped construct the space laboratory and performed valuable scientific experiments.

No.P06-38 【光に関する講義 第2版】

Rand, Stephen C.

Lectures on Light: Nonlinear and Quantum Optics using the Density Matrix, 2nd Edition (Oxford Univ. Press) 4/2019 Paperback 400 ㄱ ISBN 9780198835905

¥6,040

This book attempts to bridge in one step the enormous gap between introductory quantum mechanics and the research front of modern optics and scientific fields that make use of light. Hence, while it is suitable as a reference for the specialist in quantum optics, it will also be useful to the non-specialists from other disciplines who need to understand light and its uses in research.

No.P06-39 【マイクロスケールの流れと熱伝達】

Agrawal, Amit/Kushwaha, Hari Mohan/Jadhav, Ravi Sudam

Microscale Flow and Heat Transfer: Mathematical Modelling and Flow Physics (Mechanical Engineering Series) (Springer) 5/22/2019 Hardcover 359 ㄱ

ISBN 9783030106614 ¥24,190 This book covers concepts and the latest developments on

microscale flow and heat transfer phenomena involving a gas. The book is organised in two parts: the first part focuses on the fluid flow and heat transfer characteristics of gaseous slip flows. The second part presents modelling of such flows using higher-order continuum transport equations.

No.P06-40 【現代の凝縮物質物理学】

Girvin, Steven M./ Yang, Kun

Modern Condensed Matter Physics (Cambridge Univ. Press) 4/2019 Hardcover

714 ㄱ ISBN 9781107137394 ¥12,090

It provides instructors teaching graduate-level condensed matter courses with a comprehensive and in-depth textbook that will prepare graduate students for research or further study as well as reading more advanced and specialized books and research literature in the field.

No.P06-41 【統計物理学におけるモンテカルロシミュレーション：序論、第6版】

Binder, Kurt/Heermann, Dieter W.

Monte Carlo Simulation in Statistical Physics: An Introduction, 6th Edition (Graduate Texts in Physics)

(Springer) 6/3/2019 Hardcover

258 頁 ISBN 9783030107574

¥12,850

The sixth edition of this highly successful textbook provides a detailed introduction to Monte Carlo simulation in statistical physics, which deals with the computer simulation of many-body systems in condensed matter physics and related fields of physics and beyond (traffic flows, stock market fluctuations, etc.). Using random numbers generated by a computer, these powerful simulation methods calculate probability distributions, making it possible to estimate the thermodynamic properties of various systems.

No.P06-42 【ノーフリル物理学：代数ベースの物理学のための簡潔な研究ガイド】

McCluskey, Matthew D.

No-Frills Physics: A Concise Study Guide for Algebra-Based Physics (Textbook Series in Physical Sciences)

(CRC Press) 5/22/2019 Paperback 260 頁

ISBN 9781138583870 ¥6,040.

This textbook provides everything you need to get through a basic physics course. It guides students through all the essentials with a concise review of the concept, simple illustrations to demonstrate it, worked problems to showcase how to apply it, and a short quiz for self-testing. Whereas other standard books can be overwhelming to students, the author shares what has worked with his own students, trimming back unnecessary detail and focusing on the core basic physical concepts required to gain solid footing. The full range of topics are addressed in a manner that facilitates understanding and will encourage students to continue forward with their learning.

No.P06-43 【非平衡大気圧プラズマジェット】

Lu, Xinpei/ Reuter, Stephan/ Laroussi, Mounir

Nonequilibrium Atmospheric Pressure Plasma Jets: Fundamentals, Diagnostics, and Medical Applications

(CRC Press) 5/2019 Hardcover 446 頁

ISBN 9781498743631

¥25,690

This book provides a complete introduction to this fast-emerging field, from the fundamental physics, to experimental approaches, to plasma and reactive species diagnostics.

No.P06-44 【一次元マイクロ波フォトニック結晶】

Usanov, D. A./ Nikitov, S. A./ Skripal, A. V./ Ponomarev, D. V.

One-dimensional Microwave Photonic Crystals: New Applications

(CRC Press) 5/2019 Hardcover

154 頁

ISBN 9780367226565

¥27,200

Written for specialists and scientists working in the fields of radiophysics, microwave solid-state electronics, and microwave photonics.

No.P06-45 【開かれた量子システム：数学的展望】

Bahns, Dorothea/Pohl, Anke/Witt, Ingo

Open Quantum Systems: A Mathematical Perspective (Tutorials, Schools, and Workshops in the Mathematical Sciences)

(Birkhauser) 6/21/2019 Hardcover

271 頁

ISBN 9783030130459

¥16,630

This book presents four survey articles on various aspects of open quantum systems, specifically addressing quantum Markovian processes, Feller semigroups and nonequilibrium dynamics. The contributions are based on lectures given by distinguished experts at a summer school in Göttingen, Germany. Starting from basic notions, the authors of these lecture notes accompany the reader on a journey up to the latest research, highlighting new challenges and addressing unsolved problems at the interface between mathematics and physics. Though the book is primarily addressed to graduate students, it will also be of interest to researchers.

No.P06-46 【粒子、場、力：量子場理論と標準模型の概念ガイド】

Schmitz, Wouter

Particles, Fields and Forces: A Conceptual Guide to Quantum Field Theory and the Standard Model (The Frontiers Collection) (Springer) 5/30/2019

Hardcover 322 頁 ISBN 9783030128777 ¥12,850

How can fundamental particles exist as waves in the vacuum? How can such waves have particle properties such as inertia? What is behind the notion of “virtual” particles? Why and how do particles exert forces on one another? Not least: What are forces anyway? These are some of the central questions that have intriguing answers in Quantum Field Theory and the Standard Model of Particle Physics. Unfortunately, these theories are highly mathematical, so that most people - even many scientists - are not able to fully grasp their meaning. This book unravels these theories in a conceptual manner, using more than 180 figures and extensive explanations and will provide the nonspecialist with great insights that are not to be found in the popular science literature.

No.P06-47 【素粒子、場、量子：量子力学から素粒子物理学の標準モデル】

Ecker, Gerhard

Particles, Fields, Quanta: From Quantum Mechanics to the Standard Model of Particle Physics (Undergraduate Lecture Notes in Physics) (Springer)

4/15/2019 Paperback 160 頁 ISBN 9783030144784 ¥9,070

This book provides an introduction to the current state of our knowledge about the structure of matter. Gerhard Ecker describes the development of modern physics from the beginning of the quantum age to the standard model of particle physics, the fundamental theory of interactions of the microcosm. The focus lies on the most important discoveries and developments, e.g. of quantum field theory, gauge theories and the future of particle physics. The author also emphasizes the interplay between theory and experiment, which helps us to explore the deepest mysteries of nature.

No.P06-48 【旧量子論における対応原理の実践】

Jähnert, Martin

Practicing the Correspondence Principle in the Old Quantum Theory: A Transformation through Implementation (Archimedes Vol.56)

(Springer) 7/2019 Hardcover 293 頁 ISBN 9783030132996 ¥21,160.

This book presents a history of the correspondence principle from a new perspective. The author provides a unique exploration of the relation between the practice of theory and conceptual development in physics. In the process, he argues for a new understanding of the history of the old quantum theory and the emergence of quantum mechanics.

No.P06-49 【力学の原理：基礎物理学】

Alrasheed, Salma

Principles of Mechanics: Fundamental University Physics (Advances in Science, Technology & Innovation) (Springer) 6/20/2019 Hardcover 173 頁

ISBN 9783030151942 ¥9,070. This open access textbook takes the reader step-by-step through the concepts of mechanics in a clear and detailed manner. Mechanics is considered to be the core of physics, where a deep understanding of the concepts is essential in understanding all branches of physics. Many proofs and examples are included to help the reader grasp the fundamentals fully, paving the way to deal with more advanced topics. After solving all of the examples, the reader will have gained a solid foundation in mechanics and the skills to apply the concepts in a variety of situations.

No.P06-50 【量子計算と情報の原則：総合テキスト第2版】

Benenti, Giuliano/ Casati, Giulio/ Rossini, Davide/ Strini, Giuliano

Principles of Quantum Computation and Information: A Comprehensive Textbook, 2nd Edition (World Scientific Pub.) 5/2019 Hardcover 650 頁

ISBN 9789813237223 ¥23,880

This book provides the reader with a useful guide. In particular, the initial chapters offer a simple and self-contained introduction; no previous knowledge of quantum mechanics or classical computation is required.

No.P06-51 【光学に関する問題と解決策、ハードカバー第2版】

Lim, Swee Cheng/ Lai, Choy Heng/ Kwek, Leong Chuan

Problems and Solutions on Optics, 2nd Edition (World Scientific Pub.) 4/2019

Hardcover 202 頁 ISBN 9789813273856 ¥13,300

This latest edition has been updated with more problems and solutions, bringing the total to over 200 problems. The original problems have been modernized, and outdated questions removed, placing emphasis on those that rely on calculations. The problems range from fundamental to advanced in a wide range of topics on optics, easily enhancing the student's knowledge through workable exercises. Simple-to-solve problems play a useful role as a first check of the student's level of knowledge whereas difficult problems will challenge the student's capacity on finding the solutions.

No.P06-52 【光学に関する問題と解決策、ソフトカバー第2版】

Lim, Swee Cheng/ Lai, Choy Heng/ Kwek, Leong Chuan

Problems and Solutions on Optics, 2nd Edition (World Scientific Pub.) 4/2019

Paperback 202 頁 ISBN 9789813275287 ¥7,250

No.P06-53 【場の量子論】

Fai, Lukong Cornelius

Quantum Field Theory: Feynman Path Integrals and Diagrammatic Techniques in Condensed Matter (CRC Press) 5/2019 Hardcover 576 頁

ISBN 9780367185749 ¥25,690

This book explores quantum field theory using the Feynman functional and diagrammatic techniques as foundations to apply Quantum Field Theory to a broad range of topics in physics. This book will be of interest not only to condensed matter physicists but physicists in a range of disciplines as the techniques explored apply to high-energy as well as soft matter physics.

No.P06-54 【荷電粒子線光学系の量子力学】

Ahmed Khan, Sameen/Jagannathan, Ramaswamy

Quantum Mechanics of Charged Particle Beam Optics: Understanding Devices from Electron Microscopes to Particle Accelerators (Multidisciplinary and Applied Optics)

(CRC Press) 5/30/2019 Hardcover 372 頁 ISBN 9781138035928 ¥30,230

Classical Charged Particle Beam Optics used in the design and operation of all present-day charged particle beam devices, from low energy electron microscopes to high energy particle accelerators, is entirely based on classical mechanics. A question of curiosity is: How is classical charged particle beam optics so successful in practice though the particles of the beam, like electrons, are quantum mechanical? Quantum Mechanics of Charged Particle Beam Optics answers this question with a comprehensive formulation of 'Quantum Charged Particle Beam Optics' applicable to any charged particle beam device.

No.P06-55 【量子原理と粒子、第2版】

Wilcox, Walter

Quantum Principles and Particles, 2nd Edition (CRC Press) 7/2019 Paperback

456 頁 ISBN 9781138090378 ¥18,130

This textbook offers a unique introduction to quantum mechanics progressing gradually from elementary quantum mechanics to aspects of particle physics.

No.P06-56 【量子統計熱力学】

Huang, Keh-Ning

Quantum Statistical Thermodynamics: A Glossary of Mathematical and Physical Concepts (Springer) 6/22/2019 Hardcover 806 頁

ISBN 9789402415230 ¥22,670

The book introduces the mathematical language and fundamental physical concepts on which the entire subject of quantum statistical mechanics has been developed. Starting from the essential mathematical concepts, definitions, theorems, and formulas for the understanding and application of quantum statistical mechanics and physical sciences in general, the author provides pedagogical annotations to introduce new insights not to be found in traditional mathematics handbooks.

No.P06-57 【局所場上で有限近似の量子システム】

Digernes, Trond

Quantum Systems over Local Fields and Finite Approximations

(World Scientific Pub.) 4/2019 Hardcover 150 ㊦ ISBN 9789814713498 ¥13,600

No.P06-58 【量子世界：量子力学のオントロジーへの展望】

Fortin, Sebastian/Lopez, Cristian/Lombardi, Olimpia

Quantum Worlds: Perspectives on the Ontology of Quantum Mechanics

(Cambridge Univ. Press) 5/2019 Hardcover 408 ㊦ ISBN 9781108473477 ¥23,430

Quantum theory underpins much of modern physics and its implications draw the attention of industry, academia and public funding agencies. However there are many unsettled conceptual and philosophical problems in the interpretation of quantum mechanics which are a matter of extensive debate. These hotly debated topics include the meaning of the wave function, the nature of the quantum objects, the role of the observer, the non-locality of the quantum world, and the emergence of classicality from the quantum domain.

No.P06-59 【サンスクリット天文テーブル】

Montelle, Clemency/Plofker, Kim

Sanskrit Astronomical Tables (Sources and Studies in the History of Mathematics and Physical Sciences) (Springer) 4/8/2019 Hardcover 308 ㊦

ISBN 9783319970363 ¥18,140 This groundbreaking volume provides an up-to-date, accessible guide to Sanskrit astronomical tables and their analysis. It begins with an overview of Indian mathematical astronomy and its literature, including table texts, in the context of history of pre-modern astronomy. It then discusses the primary mathematical astronomy content of table texts and the attempted taxonomy of this genre before diving into the broad outlines of their representation in the Sanskrit scientific manuscript corpus. Finally, the authors survey the major categories of individual tables compiled in these texts, complete with brief analyses of some of the methods for constructing and using them, and then chronicle the evolution of the table-text genre and the impacts of its changing role on the discipline of Sanskrit jyotiṣa.

No.P06-60 【地震環境騒音】

Nakata, Nori/ Gualtieri, Lucia/ Fichtner, Andreas

Seismic Ambient Noise (Cambridge Univ. Press) 5/2019 Hardcover 370 ㊦

ISBN 9781108417082 ¥13,600

No.P06-61 【固体物理学における衝撃波】

Khanel, G.I.

Shock Waves in Solid State Physics (CRC Press) 4/22/2019 Hardcover

224 ㊦ ISBN 9780367225896 ¥27,200

Methods and the latest results of experimental studies of the strength properties, polymorphism and metastable states of materials and substances with extremely short durations of shock-wave action are presented. The author provides a comprehensive and theoretical description of specific features of the dynamics of elastoplastic shock compression waves in relaxing media. The presentation is preceded by a detailed description of the theoretical foundations of the method and a brief discussion of the basic methods of generating and diagnosing shock waves in solids.

No.P06-62 【スピントロニクス】

Blachowicz, Tomasz/ Ehrmann, Andrea

Spintronics: Theory, Modelling, Devices (Graduate Texts in Condensed Matter)

(De Gruyter) 6/2019 Paperback 298 ㊦ ISBN 9783110490626 ¥10,430

Starting from quantum mechanical and condensed matter foundations, this book introduces into the necessary theory behind spin electronics (Spintronics).

No.P06-63 【スパイラルと渦：文化、自然、そして科学】

Muller, Stefan C./ Tsuji, Kinko

Spirals and Vortices: In Culture, Nature, and Science (Springer) 4/2019 Hardcover

298 頁 ISBN 9783030057978 ¥12,850

This richly illustrated book explores the fascinating and ubiquitous occurrence of spirals and vortices in human culture and in nature.

No.P06-64 【現代天文学の誕生】

Habing, Harm J.

The Birth of Modern Astronomy (Historical & Cultural Astronomy) (Springer)

4/2/2019 Hardcover 565 頁 ISBN 9783319990811 ¥24,190

This richly illustrated book discusses the ways in which astronomy expanded after 1945 from a modest discipline to a robust and modern science. It begins with an introduction to the state of astronomy in 1945 before recounting how in the following years, initial observations were made in hitherto unexplored ranges of wavelengths, such as X-radiation, infrared radiation and radio waves. These led to the serendipitous discovery of more than a dozen new phenomena, including quasars and neutron stars, that each triggered a new area of research.

No.P06-65 【コスモス：新世紀の天文学、第5版】

Filippenko, Alex/Pasachoff, Jay M.

The Cosmos:Astronomy in the New Millennium, 5th edition

(Cambridge Univ. Press) 6/30/2019 Paperback 786 頁 ISBN 9781108431385 ¥12,090

The fifth edition of The Cosmos: Astronomy in the New Millennium provides you with the fundamentals of astronomical knowledge that have been built up over decades, with an expanded discussion of the incredible advances that are now taking place in this fast-paced field, such as New Horizons' flyby of Pluto, exoplanets, 'dark matter', and the direct detection of gravitational waves by the Laser Interferometer Gravitational-Wave Observatory (LIGO).

No.P06-66 【火星への任務における人的要因】

Szocik, Konrad

The Human Factor in a Mission to Mars: An Interdisciplinary Approach

(Springer) 4/2019 Hardcover 266 頁 ISBN 9783030020583 ¥22,680

This is the first book that collects contributions from scholars in various fields, from astronomy and medicine, to theology and philosophy, addressing such topics.

No.P06-67 【近代宇宙史オックスフォードハンドブック】

Kragh, Helge/ Longair, Malcolm S.

The Oxford Handbook of the History of Modern Cosmology

(Oxford Univ. Press) 5/2019 Hardcover 640 頁 ISBN 9780198817666 ¥18,900

Scientific and popular literature on modern cosmology is very extensive; however, scholarly works on the historical development of cosmology are few and scattered.

No.P06-68 【量子力学ソルバー：量子物理学を現代の物理学に適用する方法、第3版】

Basdevant, Jean-Louis/Dalibard, Jean

The Quantum Mechanics Solver: How to Apply Quantum Theory to Modern Physics, 3rd Edition (Springer) 6/2019 Hardcover 352 頁 ISBN 9783030137236 ¥12,850

Motivates students by challenging them with real-life applications of the sometimes esoteric aspects of quantum mechanics that they are learning.

No.P06-69 【時間の流れの現実】

Arthur, Richard T. W.

The Reality of Time Flow:Local Becoming in Modern Physics (The Frontiers Collection) (Springer) 6/13/2019 Hardcover 287 頁

ISBN 9783030159467 ¥13,600

It is commonly held that there is no place for the 'now' in physics, and also that the passing of time is something subjective, having to do with the way

reality is experienced but not with the way reality is. Indeed, the majority of modern theoretical physicists and philosophers of physics contend that the passing of time is incompatible with modern physical theory, and excluded in a fundamental description of physical reality. This book provides a forceful rebuttal of such claims.

No.P06-70 【量子レジームにおける熱力学】

F. Binder/L.A. Correa/C. Gogolin/J. Anders/G. Adesso

**Thermodynamics in the Quantum Regime: Fundamental Aspects and New Directions
(Fundamental Theories of Physics Vol.195)** (Springer) 4/2019 Hardcover

998 ㊦ ISBN 9783319990453 ¥27,210

Quantum Thermodynamics is a novel research field which explores the emergence of thermodynamics from quantum theory and addresses thermodynamic phenomena which appear in finite-size, non-equilibrium and finite-time contexts. Blending together elements from open quantum systems, statistical mechanics, quantum many-body physics, and quantum information theory, it pinpoints thermodynamic advantages and barriers emerging from genuinely quantum properties such as quantum coherence and correlations.

No.P06-71 【矮性銀河の化学力学進化モデルによる重元素の濃縮の理解】

Hirai, Yutaka

**Understanding the Enrichment of Heavy Elements by the Chemodynamical
Evolution Models of Dwarf Galaxies (Springer Theses)** (Springer)

6/26/2019 Hardcover 135 ㊦ ISBN 9789811378836 ¥25,700

This book addresses the mechanism of enrichment of heavy elements in galaxies, a long standing problem in astronomy. It mainly focuses on explaining the origin of heavy elements by performing state-of-the-art, high-resolution hydrodynamic simulations of dwarf galaxies. In this book, the author successfully develops a model of galactic chemodynamical evolution by means of which the neutron star mergers can be used to explain the observed abundance pattern of the heavy elements synthesized by the rapid neutron capture process, such as europium, gold, and uranium in the Local Group dwarf galaxies.

No.P06-72 【べき乗則減衰を伴う波】

Holm, Sverre

Waves With Power-law Attenuation (Springer) 4/2019 Hardcover 312 ㊦

ISBN 9783030149260 ¥24,190

This book integrates concepts from physical acoustics with those from linear viscoelasticity and fractional linear viscoelasticity

No.P06-73 【なぜ理論を信頼するのか：基礎物理学の認識論】

Dardashti, Radin/ Dawid, Richard/ Thebault, Karim

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(Cambridge Univ. Press) 4/2019 Hardcover 446 ㊦ ISBN 9781108470957 ¥13,600

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