

Physics 0625 41 May June 2016 Physics Maths Tutor

Science and Technology from Global and Historical Perspectives *In Search of the Good Society* **The New Physics Frontiers in the LHC-2 Era** **Information Technology in Medical Diagnostics II** **From Physics to Econophysics and Back: Methods and Insights** *Epistemic Virtues in the Sciences and the Humanities* **Applications of Quantum Mechanical Techniques to Areas Outside of Quantum Mechanics. 2nd Edition** **Routledge Handbook of Education in India** **Women At Imperial College; Past, Present And Future** **Filamentous Bacteriophage in Bio/Nano/Technology, Bacterial Pathogenesis and Ecology** **TASI 2016 Handbook On Big Data And Machine Learning In The Physical Sciences (In 2 Volumes)** **100 Years of Chronogeometrodynamics: The Status of the Einstein's Theory of Gravitation in Its Centennial Year** *Memories for the Intelligent Internet of Things* **Prime Symmetry and Particle Physics** *Astronomy for Older Eyes* **From My Vast Repertoire...: Guido Altarelli's Legacy** **The Routledge Handbook of Education in India** **Emerging Technologies to Enhance Learning among Slow Learners** **Polysituatedness** *Single Flux Quantum Integrated Circuit Design* **Geometry of Moduli Spaces and Representation Theory** **Gender, Education and Work** **Foundations of Classical Mechanics** **Thinking about Science, Reflecting on Art** **Atomic Junction** *Computational Modeling in Biomedical Engineering and Medical Physics* **Calling Taikong: A Strategy Report and Study of China's Future Space Science Missions** *Conceptual Spaces: Elaborations and Applications* **Coronal Magnetometry** **Fundamentals of Condensed Matter Physics** **Tropospheric and Ionospheric Effects on Global Navigation Satellite Systems** **The 2011 Japan Earthquake and Tsunami: Reconstruction and Restoration** *Democracy and Fake News* **Geometric Methods in Physics XXXV** **Green Synthesis in Nanomedicine and Human Health** *Aplusphysics* **The Square and the Tower** *Feyerabend's Formative Years. Volume 1. Feyerabend and Popper* **Anticipating the Next Discoveries in Particle Physics**

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The 2011 Japan Earthquake and Tsunami: Reconstruction and Restoration Jan 30 2020 This book covers the restoration and reconstruction process and activities undertaken in Japan in the first five years since the 2011 Earthquake and Tsunami – a period widely considered to be the most intensive reconstruction phase within the 10-year restoration plan drawn up by the Japanese Government. The respective chapters explore technical, scientific, social and non-scientific (policy-related) aspects, including: reconstruction and restoration policies, infrastructure and designs for tsunami coastal defence, resilient urban areas and affected communities, housing and relocation schemes, disaster mitigation and evacuation measures, reactivation of the economy, revitalization of fisheries and coastal agriculture, and industry and tourism. The book also illustrates some of the achievements and failures in a broad range of projects and initiatives intended to address the above-mentioned issues, making it particularly relevant for experts, decision makers, students and other interested scholars.

From My Vast Repertoire...: Guido Altarelli's Legacy Jun 16 2021 Guido Altarelli was a leading figure in 20th century particle physics. His scientific contributions and leadership played a key role in the development of the Standard Model of fundamental interactions, as well as the current search for new physics beyond it, both at and beyond CERN. This book is a collection of original contributions, at the cutting edge of scientific research, by some of the leading theoretical and experimental high-

energy physicists currently in the field. These were inspired by Guido's ideas, whether directly or indirectly. This book is ideal for researchers looking to keep up with the latest developments in high-energy physics.

Astronomy for Older Eyes Jul 18 2021 This book is for the aging amateur astronomy population, including newcomers to astronomy in their retirement and hobbyists who loved peering through a telescope as a child. Whether a novice or an experienced observer, the practice of astronomy differs over the years. This guide will extend the enjoyment of astronomy well into the Golden Years by addressing topics such as eye and overall health issues, recommendations on telescope equipment, and astronomy-related social activities especially suited for seniors. Many Baby-Boomers reaching retirement age are seeking new activities, and amateur astronomy is a perfect fit as a leisure time activity. Established backyard astronomers who began their love of astronomy in their youth, meanwhile, may face many physical and mental challenges in continuing their lifelong hobby as they age beyond their 55th birthdays. That perfect telescope purchased when they were thirty years old now suddenly at sixty years old feels like an immovable object in the living room. The 20/20 eyesight has given way to reading glasses or bifocals. Treasured eyepieces feel all wrong. Growing old is a natural process of life, but astronomy is timeless. With a little knowledge and some lifestyle adjustments, older astronomers can still enjoy backyard observing well into their seventies, eighties and even into their nineties.

Polysituatedness Mar 14 2021 This book is concerned with the complexities of defining 'place', of observing and 'seeing' place, and how we might write a poetics of place. From Kathy Acker to indigenous Australian poet Jack Davis, the book touches on other writers and theorists, but in essence is a hands-on 'praxis' book of poetic practice. The work extends John Kinsella's theory of 'international regionalism' and posits new ways of reading the relationship between place and individual, between individual and the natural environment, and how place occupies the person as much as the person occupies place. It provides alternative readings of writers through place and space, especially Australian writers, but also non-Australian. Further, close consideration is given to being of 'famine-migrant' Irish heritage and the complexities of 'returning'. A close-up examination of 'belonging' and exclusion is made on a day-to-day basis. The book offers an approach to creating poems and literary texts constituted by experiencing multiple places, developing a model of polyvalent belonging known as 'polysituatedness'. It works as a companion volume to Kinsella's earlier Manchester University Press critical work, *Disclosed Poetics: Beyond Landscape to Lyricism*.

Calling Taikong: A Strategy Report and Study of China's Future Space Science Missions Jul 06 2020 This book describes the status quo of space science in China, details the scientific questions to be addressed by the Chinese space science community in 2016-2030, and proposes key strategic goals, space science programs and missions, the roadmap and implementation approaches. Further, it explores the supporting technologies needed and provides an outlook of space science beyond the year 2030. "Taikong" means "outer space" in Chinese, and space science is one of the most important areas China plans to develop in the near future. This book is authored by Ji Wu, a leader of China's space science program, together with National Space Science Center, Chinese Academy of Sciences, a leading institute responsible for planning and managing most of China's space science missions. It also embodies the viewpoints shared by many space scientists and experts on future space science development. Through this book, general readers and researchers alike will gain essential insights into the current developments and future prospects of space science in China. Government decision-makers will also find the book a useful reference for strategies and planning in the field of space science.

Feyerabend's Formative Years. Volume 1. Feyerabend and Popper Jul 26 2019 This book offers an inside look into the notoriously tumultuous, professional relationship of two great minds: Karl Popper and Paul Feyerabend. It collects their complete surviving correspondence (1948-1967) and contains previously unpublished papers by both. An introduction situates the correspondence in its historical context by recounting how they first came to meet and an extensive editorial apparatus provides a wealth of background information along with systematic mini-biographies of persons named. Taken together, the collection presents Popper and Feyerabend's controversial ideas against the background of the postwar academic environment. It exposes key aspects of an evolving student-mentor relationship that eventually ended amidst increasing accusations of plagiarism. Throughout, readers will find in-depth discussions on a wide range of intriguing topics, including an ongoing debate over the foundations of quantum theory and Popper's repeated attempts to design an experiment that would test different interpretations of quantum mechanics. The captivating exchange between Feyerabend and Popper offers a valuable resource that will appeal to scientists, laymen, and a wide range of scholars: especially philosophers, historians of science and philosophy and, more generally, intellectual historians.

Epistemic Virtues in the Sciences and the Humanities May 28 2022 This book explores how physicists, astronomers, chemists, and historians in the late nineteenth and early twentieth centuries employed 'epistemic virtues' such as accuracy, objectivity, and intellectual courage. In doing so, it takes the first step in providing an integrated

history of the sciences and humanities. It assists in addressing such questions as: What kind of perspective would enable us to compare organic chemists in their labs with paleographers in the Vatican Archives, or anthropologists on a field trip with mathematicians poring over their formulas? While the concept of epistemic virtues has previously been discussed, primarily in the contexts of the history and philosophy of science, this volume is the first to enlist the concept in bridging the gap between the histories of the sciences and the humanities. Chapters research whether epistemic virtues can serve as a tool to transcend the institutional disciplinary boundaries and thus help to attain a 'post-disciplinary' historiography of modern knowledge. Readers will gain a contextualization of epistemic virtues in time and space as the book shows that scholars themselves often spoke in terms of virtue and vice about their tasks and accomplishments. This collection of essays opens up new perspectives on questions, discourses, and practices shared across the disciplines, even at a time when the neo-Kantian distinction between sciences and humanities enjoyed its greatest authority. Scholars including historians of science and of the humanities, intellectual historians, virtue epistemologists, and philosophers of science will all find this book of particular interest and value.

Conceptual Spaces: Elaborations and Applications Jun 04 2020 This edited book focuses on concepts and their applications using the theory of conceptual spaces, one of today's most central tracks of cognitive science discourse. It features 15 papers based on topics presented at the Conceptual Spaces @ Work 2016 conference. The contributors interweave both theory and applications in their papers. Among the first mentioned are studies on metatheories, logical and systemic implications of the theory, as well as relations between concepts and language. Examples of the latter include explanatory models of paradigm shifts and evolution in science as well as dilemmas and issues of health, ethics, and education. The theory of conceptual spaces overcomes many translational issues between academic theoretization and practical applications. The paradigm is mainly associated with structural explanations, such as categorization and meronymy. However, the community has also been relating it to relations, functions, and systems. The book presents work that provides a geometric model for the representation of human conceptual knowledge that bridges the symbolic and the sub-conceptual levels of representation. The model has already proven to have a broad range of applicability beyond cognitive science and even across a number of disciplines related to concepts and representation.

Coronal Magnetometry May 04 2020 Magnetism defines the complex and dynamic solar corona. It determines the magnetic loop structure that dominates images of the corona, and stores the energy necessary to drive coronal eruptive phenomena and flare explosions. At great heights the corona transitions into the ever-outflowing solar wind, whose speed and three-dimensional morphology are controlled by the global coronal magnetic field. Coronal magnetism is thus at the heart of any understanding of the nature of the corona, and essential for predictive capability of how the Sun affects the Earth. Coronal magnetometry is a subject that requires a concerted effort to draw together the different strands of research happening around the world. Each method provides some information about the field, but none of them can be used to determine the full 3D field structure in the full volume of the corona. Thus, we need to combine them to understand the full picture. The purpose of this Frontiers Research Topic on Coronal Magnetometry is to provide a forum for comparing and coordinating these research methods, and for discussing future opportunities.

Memories for the Intelligent Internet of Things Sep 19 2021 A detailed, practical review of state-of-the-art implementations of memory in IoT hardware As the Internet of Things (IoT) technology continues to evolve and become increasingly common across an array of specialized and consumer product applications, the demand on engineers to design new generations of flexible, low-cost, low power embedded memories into IoT hardware becomes ever greater. This book helps them meet that demand. Coauthored by a leading international expert and multiple patent holder, this book gets engineers up to speed on state-of-the-art implementations of memory in IoT hardware. *Memories for the Intelligent Internet of Things* covers an array of common and cutting-edge IoT embedded memory implementations. Ultra-low-power memories for IoT devices-including plastic and polymer circuitry for specialized applications, such as medical electronics-are described. The authors explore microcontrollers with embedded memory used for smart control of a multitude of Internet devices. They also consider neuromorphic memories made in Ferroelectric RAM (FeRAM), Resistance RAM (ReRAM), and Magnetic RAM (MRAM) technologies to implement artificial intelligence (AI) for the collection, processing, and presentation of large quantities of data generated by IoT hardware. Throughout the focus is on memory technologies which are complementary metal oxide semiconductor (CMOS) compatible, including embedded floating gate and charge trapping EEPROM/Flash along with FeRAMs, FeFETs, MRAMs and ReRAMs. Provides a timely, highly practical look at state-of-the-art IoT memory implementations for an array of product applications Synthesizes basic science with original analysis of memory technologies for Internet of Things (IoT) based on the authors' extensive experience in the field Focuses on practical and timely applications throughout Features numerous illustrations, tables, application requirements, and photographs Considers memory related security issues in IoT devices *Memories for the Intelligent Internet of Things* is a valuable

working resource for electrical engineers and engineering managers working in the electronics system and semiconductor industries. It is also an indispensable reference/text for graduate and advanced undergraduate students interested in the latest developments in integrated circuit devices and systems.

TASI 2016 Dec 23 2021 "This volume is a compilation of lectures delivered at the TASI 2016 summer school, "Anticipating the Next Discoveries in Particle Physics", held at the University of Colorado at Boulder in June 2016. The school focused on topics in theoretical particle physics, phenomenology, dark matter, and cosmology of interest to contemporary researchers in these fields. The lectures are accessible to graduate students in the initial stages of their research careers."--Publisher's website.

Handbook On Big Data And Machine Learning In The Physical Sciences (In 2 Volumes) Nov 21 2021 This compendium provides a comprehensive collection of the emergent applications of big data, machine learning, and artificial intelligence technologies to present day physical sciences ranging from materials theory and imaging to predictive synthesis and automated research. This area of research is among the most rapidly developing in the last several years in areas spanning materials science, chemistry, and condensed matter physics. Written by world renowned researchers, the compilation of two authoritative volumes provides a distinct summary of the modern advances in instrument — driven data generation and analytics, establishing the links between the big data and predictive theories, and outlining the emerging field of data and physics-driven predictive and autonomous systems.

Gender, Education and Work Dec 11 2020 Girls outperform boys in educational achievement, yet women in work are less well paid, are underrepresented in positions of power and carry a disproportionate burden of care and childcare. Gender, Education and Work analyses and interprets the latest data and research in the field to offer detailed historical and sociological explanations for this continuing inequity, exploring different dimensions of inequality and how they intersect. With discussion questions and selected further reading to support reflection on your own understanding and assumptions, it covers key topics: Historical approaches to the education of girls and women Key theories and debates Patterns of achievement and intersectionality Attainment gaps and socio-economic status Ethnicity and attainment gaps Gender in the classroom and gender identity in schools Patterns of employment and the nature of work The gender pay gap Women's experience of work Gender, Education and Work provides the arguments together with the historical evidence and research data required by serious education studies and sociology students engaged in the analysis of this urgent and complex topic.

Anticipating the Next Discoveries in Particle Physics Jun 24 2019 This volume is a compilation of lectures delivered at the TASI 2016 summer school, 'Anticipating the Next Discoveries in Particle Physics', held at the University of Colorado at Boulder in June 2016. The school focused on topics in theoretical particle physics, phenomenology, dark matter, and cosmology of interest to contemporary researchers in these fields. The lectures are accessible to graduate students in the initial stages of their research careers.

Green Synthesis in Nanomedicine and Human Health Oct 28 2019 Green synthesis is an emerging method for deriving nanoparticles present in natural plants for use in nanomedicine. Written by experts in the field, Green Synthesis in Nanomedicine and Human Health showcases the exciting developments of this specialty and its potential for promoting human health and well-being. This book gives practical information on novel preparation methods for identifying nanoparticles present in natural plants. It discusses applications of nanoparticles in combating communicable, non-communicable and vector-borne diseases. It also explores the potential for nanoparticles to combat antimicrobial resistance through improvements in treatment methods, diagnostics and drug delivery systems. Features scientific evidence of opportunities for integrating indigenous flora into nanomedicine to develop cost-effective therapeutic and diagnostic solutions for diseases, including cancer, tuberculosis, malaria and diabetes. Places green synthesis and nanomedicine in the African orthodox and traditional healthcare context. Provides policymakers with scientific evidence to inform policies for controlling or mitigating dangerous diseases. This book is essential reading for students, scientists, policymakers and practitioners of nanotechnology, and will appeal to anyone with an interest in integrating traditional African healthcare and Western medicine.

Applications of Quantum Mechanical Techniques to Areas Outside of Quantum Mechanics. 2nd Edition Apr 26 2022 This book deals with applications of quantum mechanical techniques to areas outside of quantum mechanics, so-called quantum-like modeling. Research in this area has grown over the last 15 years. But even already more than 50 years ago, the interaction between Physics Nobelist Pauli and the psychologist Carl Jung in the 1950's on seeking to find analogous uses of the complementarity principle from quantum mechanics in psychology needs noting. This book does NOT want to advance that society is quantum mechanical! The macroscopic world is manifestly not quantum mechanical. But this rules not out that one can use concepts and the mathematical apparatus from quantum physics in a macroscopic environment. A mainstay ingredient of quantum mechanics, is 'quantum probability' and this tool has been proven to be useful in the mathematical modelling

of decision making. In the most basic experiment of quantum physics, the double slit experiment, it is known (from the works of A. Khrennikov) that the law of total probability is violated. It is now well documented that several decision making paradoxes in psychology and economics (such as the Ellsberg paradox) do exhibit this violation of the law of total probability. When data is collected with experiments which test ‘non-rational’ decision making behaviour, one can observe that such data often exhibits a complex non-commutative structure, which may be even more complex than if one considers the structure allied to the basic two slit experiment. The community exploring quantum-like models has tried to address how quantum probability can help in better explaining those paradoxes. Research has now been published in very high standing journals on resolving some of the paradoxes with the mathematics of quantum physics. The aim of this book is to collect the contributions of world’s leading experts in quantum like modeling in decision making, psychology, cognition, economics, and finance.

Thinking about Science, Reflecting on Art Oct 09 2020 Thinking about Science, Reflecting on Art: Bringing Aesthetics and Philosophy of Science Together is the first book to systematically examine the relationship between the philosophy of science and aesthetics. With contributions from leading figures from both fields, this edited collection engages with such questions as: Does representation function in the same way in science and in art? What important characteristics do scientific models share with literary fictions? What is the difference between interpretation in the sciences and in the arts? Can there be a science of aesthetics? In what ways can aesthetics and philosophy of science be integrated? Aiming to develop the interconnections between the philosophy of science and the philosophy of art more broadly and more deeply than ever before, this volume not only explores scientific representation by comparison with fiction but extends the scope of interaction to include metaphysical and other questions around methodology in mainstream philosophy of science, including the aims of science, the characterisation of scientific understanding, and the nature of observation, as well as drawing detailed comparisons between specific examples in both art and the sciences.

Single Flux Quantum Integrated Circuit Design Feb 10 2021 High efficiency, large scale, stationary computing systems – supercomputers and data centers – are becoming increasingly important due to the movement of data storage and processing onto remote cloud servers. This book is dedicated to a technology particularly appropriate for this application – superconductive electronics, in particular, rapid single flux quantum circuits. The primary purpose of this book is to introduce and systematize recent developments in superconductive electronics into a cohesive whole to support the further development of large scale computing systems. A brief background into the physics of superconductivity and the operation of common superconductive devices is provided, followed by an introduction into different superconductive logic families, including the logic gates, interconnect, and bias current distribution. Synchronization, fabrication, and electronic design automation methodologies are presented, reviewing both widely established concepts and techniques as well as recent approaches. Issues related to memory, synchronization, bias networks, and testability are described, and models, circuits, algorithms, and design methodologies are discussed and placed in context. The aim of this book is to provide insight and engineering intuition into the design of large scale digital superconductive circuits and systems.

Foundations of Classical Mechanics Nov 09 2020 The book aims at speeding up undergraduates to attain interest in advanced concepts and methods in science and engineering.

Women At Imperial College; Past, Present And Future Feb 22 2022 This book is a celebration of women in science, technology, medicine and business at Imperial College London. It shows the inspirational role women played in the creation of the legacy of the College since its inception, and represents a guide to their achievements. Biographies and archive material provide an insight into their academic work and social lives, while first-hand information collected for individual cases gives a comprehensive overview of student and professional life in their diverse fields and subjects. Further careers as academics and businesswomen are also documented, demonstrating the importance of and wider social impact of women in the sciences.

Atomic Junction Sep 07 2020 An innovative account of the first nuclear programme in independent Africa, centring on the promises and perils of atomic research in Ghana.

Fundamentals of Condensed Matter Physics Apr 02 2020 Based on an established course and covering the fundamentals, central areas and contemporary topics of this diverse field, Fundamentals of Condensed Matter Physics is a much-needed textbook for graduate students. The book begins with an introduction to the modern conceptual models of a solid from the points of view of interacting atoms and elementary excitations. It then provides students with a thorough grounding in electronic structure and many-body interactions as a starting point to understand many properties of condensed matter systems - electronic, structural, vibrational, thermal, optical, transport, magnetic and superconducting - and methods to calculate them. Taking readers through the concepts and techniques, the text gives both theoretically and experimentally

inclined students the knowledge needed for research and teaching careers in this field. It features 246 illustrations, 9 tables and 100 homework problems, as well as numerous worked examples, for students to test their understanding. Solutions to the problems for instructors are available at www.cambridge.org/cohenlouie.

Routledge Handbook of Education in India Mar 26 2022 This comprehensive handbook introduces the reader to the education system in India in terms of its structural features, its relations with society and culture, and the debates that have shaped present-day policy ethos. Expert scholars provide a lucid analysis of complex themes such as the equal distribution of educational opportunities, legal provisions shaping the opportunity structure, and curricular issues in major areas of knowledge. The volume provides a general overview of India's education system and examines key and current issues that face higher and school education, the examination system, disciplines of social sciences, curriculum, teachers, law, coaching and unemployment. This handbook will serve as a valuable resource and guide to anyone seeking authentic information about India's contemporary educational challenges in relation to its society, economy and politics. It will be useful to scholars and researchers of education, public policy and administration, sociology and political studies as well as practitioners, think-tanks, those in media, government and NGOs.

Geometry of Moduli Spaces and Representation Theory Jan 12 2021 This book is based on lectures given at the Graduate Summer School of the 2015 Park City Mathematics Institute program "Geometry of moduli spaces and representation theory", and is devoted to several interrelated topics in algebraic geometry, topology of algebraic varieties, and representation theory. Geometric representation theory is a young but fast developing research area at the intersection of these subjects. An early profound achievement was the famous conjecture by Kazhdan–Lusztig about characters of highest weight modules over a complex semi-simple Lie algebra, and its subsequent proof by Beilinson-Bernstein and Brylinski-Kashiwara. Two remarkable features of this proof have inspired much of subsequent development: intricate algebraic data turned out to be encoded in topological invariants of singular geometric spaces, while proving this fact required deep general theorems from algebraic geometry. Another focus of the program was enumerative algebraic geometry. Recent progress showed the role of Lie theoretic structures in problems such as calculation of quantum cohomology, K-theory, etc. Although the motivation and technical background of these constructions is quite different from that of geometric Langlands duality, both theories deal with topological invariants of moduli spaces of maps from a target of complex dimension one. Thus they are at least heuristically related, while several recent works indicate possible strong technical connections. The main goal of this collection of notes is to provide young researchers and experts alike with an introduction to these areas of active research and promote interaction between the two related directions.

Tropospheric and Ionospheric Effects on Global Navigation Satellite Systems Mar 02 2020 Tropospheric and Ionospheric Effects on Global Navigation Satellite Systems Explore atmospheric effects on radio frequency propagation in the context of Global Navigation Satellite System communication In Tropospheric and Ionospheric Effects on Global Navigation Satellite Systems, a team of distinguished researchers deliver an accessible and authoritative introduction to all scientifically relevant effects caused by the ionosphere and troposphere on GNSS RF signals. The book explores the origin of each type of propagation effect and explains it from a fundamental physical perspective. Each of the major methods used for the measurement, prediction, and mitigation of ionospheric and tropospheric effects on GNSS are discussed in detail. The authors also provide the mechanisms that drive ionization and plasma transport in the ionosphere, propagation phenomena (including scattering, absorption, and scintillations), and the predominant predictive models used to predict ionospheric propagation effects. With an emphasis on global navigation satellite systems, the book discusses the US Standard Atmosphere, a general reference model for characteristics of the unionized atmosphere. It also considers: Thorough introductions to the Global Positioning System and the principles of GNSS positioning Comprehensive explorations of tropospheric propagation and predictive models of the troposphere Practical discussions of the physics of the ionosphere, experimental observation of the ionosphere, and ionospheric propagation In-depth examinations of predictive models of the ionosphere, including group delay models for single-frequency GNSS receivers Ideal for engineers and research scientists with a professional or personal interest in geophysics, RF propagation, and GNSS and GPS applications, Tropospheric and Ionospheric Effects on Global Navigation Satellite Systems will also earn a place in the libraries of undergraduate and graduate students studying RF propagation or GNSS.

Computational Modeling in Biomedical Engineering and Medical Physics Aug 07 2020 Mathematical and numerical modelling of engineering problems in medicine is aimed at unveiling and understanding multidisciplinary interactions and processes and providing insights useful to clinical care and technology advances for better medical equipment and systems. When modelling medical problems, the engineer is confronted with multidisciplinary problems of electromagnetism, heat and mass transfer, and structural mechanics with, possibly, different time and space scales, which may raise concerns in formulating consistent, solvable mathematical models. Computational Medical Engineering presents a number of engineering for medicine problems that may be encountered in medical physics, procedures, diagnosis and monitoring

techniques, including electrical activity of the heart, hemodynamic activity monitoring, magnetic drug targeting, bioheat models and thermography, RF and microwave hyperthermia, ablation, EMF dosimetry, and bioimpedance methods. The authors discuss the core approach methodology to pose and solve different problems of medical engineering, including essentials of mathematical modelling (e.g., criteria for well-posed problems); physics scaling (homogenization techniques); Constructal Law criteria in morphing shape and structure of systems with internal flows; computational domain construction (CAD and, or reconstruction techniques based on medical images); numerical modelling issues, and validation techniques used to ascertain numerical simulation results. In addition, new ideas and venues to investigate and understand finer scale models and merge them into continuous media medical physics are provided as case studies. Presents the fundamentals of mathematical and numerical modeling of engineering problems in medicine Discusses many of the most common modelling scenarios for Biomedical Engineering, including, electrical activity of the heart hemodynamic activity monitoring, magnetic drug targeting, bioheat models and thermography, RF and microwave hyperthermia, ablation, EMF dosimetry, and bioimpedance methods Includes discussion of the core approach methodology to pose and solve different problems of medical engineering, including essentials of mathematical modelling, physics scaling, Constructal Law criteria in morphing shape and structure of systems with internal flows, computational domain construction, numerical modelling issues, and validation techniques used to ascertain numerical simulation results

The Routledge Handbook of Education in India May 16 2021 This comprehensive handbook introduces the reader to the education system in India in terms of its structural features, its relations with society and culture, and the debates that have shaped the present-day policy ethos. The book provides an overview of major debates that have shaped India's education systems, as well as the significant issues within higher and school education, education studies, and policies. Expert scholars provide a lucid analysis of complex themes such as the equity, access, and the quality of education. The volume also examines legal provisions and policies shaping the distribution structure and curricular issues in major areas of knowledge, as well as the provision of schools for the marginalised, economically weak, and people with disabilities. This new edition includes an analysis of the private sector's participation in higher education and the technical and vocational education and training systems in India. This handbook will serve as a valuable resource and guide to educators and public policy practitioners seeking information about India's contemporary educational challenges. It will also be useful to scholars and researchers of education, public policy and administration, sociology, and political studies, as well as think-tanks, the media, policy-makers, and NGOs.

Science and Technology from Global and Historical Perspectives Nov 02 2022 This book provides science and technology ethos to a literate person. It starts with a rather detailed treatment of basic concepts in human values, educational status and domains of education, development of science and technology and their contributions to the welfare of society. It describes ways and means of scientific progresses and technological advancements with their historical perspectives including scientific viewpoints of contributing scientists and technologists. The technical, social, and cultural dimensions are surveyed in relation to acquisition and application of science, and advantages and hindrances of technological developments. Science and Technology is currently taught as a college course in many universities with the intention to introduce topics from a global historical perspective so that the reader shall stretch his/her vision by mapping the past to the future. The book can also serve as a primary reference for such courses.

Prime Symmetry and Particle Physics Aug 19 2021 Is it possible to take a set of particle masses and then work backwards to find a hidden symmetry? Does the Higgs Boson have a partner particle and might that particle solve the mystery of dark matter? Can the tiny masses of neutrinos be predicted? Prime Symmetry and Particle Physics begins with the understanding that the constant α does not have to be measured in spacetime: it can be calculated from a set of real numbers. Former PhD student, George Brewer explores the idea that if this is true of α , why not of other constants? A standard model of physics predicts interactions between quantum fields when particles scatter, but 26 numbers, dimensionless constants for force strengths and the masses of elementary particles, still need to be put into that model. Brewer proposes that many of those constants can actually be calculated from a single equation and a set of integer parameters – a theory that he calls the prime symmetry model. Comparing a set of measured constants against their calculated counterparts provides good evidence for the model's validity. Brewer opens the door for readers to join a select group with information that theorists and experimentalists at the Large Hadron Collider (LHC) are yet to consider, offering them the opportunity to verify the model's deceptively simple mathematics for themselves, simply by using an online scientific calculator. Inspired by Albert Einstein, Stephen Hawking and Sean Carroll, Prime Symmetry and Particle Physics is an essential read for all particle physics enthusiasts. The book will also appeal to readers interested in the Higgs boson events at the LHC.

Democracy and Fake News Dec 31 2019 This book explores the challenges that disinformation, fake news, and post-truth politics pose to democracy from a multidisciplinary perspective. The authors analyse and interpret how the use of technology and social media as well as the emergence of new political narratives has been progressively changing the information landscape, undermining some of the pillars of democracy. The volume sheds light on some topical questions connected to fake news, thereby contributing to a fuller understanding of its impact on democracy. In the Introduction, the editors offer some orientating definitions of post-truth politics, building a theoretical framework where various different aspects of fake news can be understood. The book is then divided into three parts: Part I helps to contextualise the phenomena investigated, offering definitions and discussing key concepts as well as aspects linked to the manipulation of information systems, especially considering its reverberation on democracy. Part II considers the phenomena of disinformation, fake news, and post-truth politics in the context of Russia, which emerges as a laboratory where the phases of creation and diffusion of fake news can be broken down and analysed; consequently, Part II also reflects on the ways to counteract disinformation and fake news. Part III moves from case studies in Western and Central Europe to reflect on the methodological difficulty of investigating disinformation, as well as tackling the very delicate question of detection, combat, and prevention of fake news. This book will be of great interest to students and scholars of political science, law, political philosophy, journalism, media studies, and computer science, since it provides a multidisciplinary approach to the analysis of post-truth politics.

100 Years of Chronogeometrodynamics: The Status of the Einstein's Theory of Gravitation in Its Centennial Year Oct 21 2021 This book is a printed edition of the Special Issue "100 Years of Chronogeometrodynamics: the Status of the Einstein's Theory of Gravitation in Its Centennial Year" that was published in Universe

From Physics to Econophysics and Back: Methods and Insights Jun 28 2022

Geometric Methods in Physics XXXV Nov 29 2019 This book features a selection of articles based on the XXXV Bia?owie?a Workshop on Geometric Methods in Physics, 2016. The series of Bia?owie?a workshops, attended by a community of experts at the crossroads of mathematics and physics, is a major annual event in the field. The works in this book, based on presentations given at the workshop, are previously unpublished, at the cutting edge of current research, typically grounded in geometry and analysis, and with applications to classical and quantum physics. In 2016 the special session "Integrability and Geometry" in particular attracted pioneers and leading specialists in the field. Traditionally, the Bia?owie?a Workshop is followed by a School on Geometry and Physics, for advanced graduate students and early-career researchers, and the book also includes extended abstracts of the lecture series.

In Search of the Good Society Oct 01 2022 Compelling reading, this book both reinforces and elevates the role of art in the exploration and analysis of the concepts of democracy, globalization and capitalism. In the book, the author describes a post-human world, a state we have already entered. But how should we think about it, given we have already been co-opted? Can we articulate the future outside the false discipline that the market often dictates, beyond the clutches of a few social media companies, and maintain our rich diversities while holding on to those things that make life possible and worthwhile: love, hope and art? Running throughout the book is the central theme of uncertainty and divergence. It is uncompromising in asking the question about the need for a new global creation story, which has at its core not the certainties of one defined creation myth but the need to feel comfortable with the uncertainty principle both in physics and the political economy. It is up to artists, scientists and philosophers to articulate this wonder and to help us write a new global creation story based on art (the arts), uncertainty, diversity, risk and wonder – and of course knowledge. This book has the capacity to both clarify and re-shape your thinking.

The New Physics Frontiers in the LHC-2 Era Aug 31 2022 In June 2016, a group of 167 physicists from 31 countries have met in Erice to participate in the 54th Course of the International School of Subnuclear Physics. The main focus of this year's course has been the new frontiers of Physics in the LHC-2 Era and in all labs the world over, as well as the new frontiers in related fields.

Emerging Technologies to Enhance Learning among Slow Learners Apr 14 2021

Filamentous Bacteriophage in Bio/Nano/Technology, Bacterial Pathogenesis and Ecology Jan 24 2022 Filamentous phage (genus Inovirus) infect almost invariably Gram-negative bacteria. They are distinguished from all other bacteriophage not only by morphology, but also by the mode of their assembly, a secretion-like process that does not kill the host. "Classic" Escherichia colifilamentous phage Ff (f1, fd and M13) are used in display technology and bio/nano/technology, whereas filamentous phage in general have been put to use by their bacterial hosts for adaptation to environment, pathogenesis, biofilm formation, horizontal gene transfer and modulating genome stability. Many filamentous phage have a "symbiotic" life style that is often manifested by inability to form plaques, preventing their identification by standard phage-hunting techniques; while the absence or very low sequence conservation between phage infecting different species often complicates their identification through

bioinformatics. Nevertheless, the number of discovered filamentous phage is increasing rapidly, along with realization of their significance. “Temperate” filamentous phage whose genomes are integrated into the bacterial chromosome of pathogenic bacteria often modulate virulence of the host. The *Vibrio cholerae* phage CTXf genome encodes cholera toxin, whereas many filamentous prophage influence virulence without encoding virulence factors. The nature of their effect on the bacterial pathogenicity and overall physiology is the next frontier in understanding intricate relationship between the filamentous phage and their hosts. Phage display has been widely used as a combinatorial technology of choice for discovery of therapeutic antibodies and peptide leads that have been applied in the vaccine design, diagnostics and drug development or targeting over the past thirty years. Virion proteins of filamentous phage are integral membrane proteins prior to assembly; hence they are ideal for display of bacterial surface and secreted proteins. The use of this technology at the scale of microbial community has potential to identify host-interacting proteins of uncultivable or low-represented community members. Recent applications of Ff filamentous phage extend into protein evolution, synthetic biology and nanotechnology. In many applications, phage serves as a monodisperse long-aspect nano-scaffold of well-defined shape. Chemical or genetic modifications of this scaffold are used to introduce the necessary functionalities, such as fluorescent labels, ligands that target specific proteins, or peptides that promote formation of inorganic or organic nanostructures. We anticipate that the future holds development of new strategies for particle assembly, site-specific multi-functional modifications and improvement of existing modification strategies. These improvements will render the production of filamentous-phage-templated materials safe and affordable, allowing their applications outside of the laboratory.

Aplusphysics Sep 27 2019 Featuring more than five hundred questions from past Regents exams with worked out solutions and detailed illustrations, this book is integrated with APlusPhysics.com website, which includes online questions and answer forums, videos, animations, and supplemental problems to help you master Regents Physics Essentials.

Information Technology in Medical Diagnostics II Jul 30 2022 For many centuries, mankind has tried to learn about his health. Initially, during the pre-technological period, he could only rely on his senses. Then there were simple tools to help the senses. The breakthrough turned out to be the discovery of X-rays, which gave insight into the human body. Contemporary medical diagnostics are increasingly supported by information technology, which for example offers a very thorough analysis of the tissue image or the pathology differentiation. It also offers possibilities for very early preventive diagnosis. Under the influence of information technology, 'traditional' diagnostic techniques and new ones are changing. More and more often the same methods can be used for both medical and technical diagnostics. In addition, methodologies are developed that are inspired by the functioning of living organisms. *Information Technology in Medical Diagnostics II* is the second volume in a series showing the latest advances in information technologies directly or indirectly applied to medical diagnostics. Unlike the previous book, this volume does not contain closed chapters, but rather extended versions of presentations made during two conferences: XLVIII International Scientific and Practical Conference ‘Application of Lasers in Medicine and Biology’ (Kharkov, Ukraine) and the International Scientific Internet conference ‘Computer graphics and image processing’ (Vinnitsa, Ukraine), both held in May 2018. *Information Technology in Medical Diagnostics II* links technological issues to medical and biological issues, and will be valuable to academics and professionals interested in medical diagnostics and IT.

The Square and the Tower Aug 26 2019 The instant New York Times bestseller. A brilliant recasting of the turning points in world history, including the one we're living through, as a collision between old power hierarchies and new social networks. “Captivating and compelling.” —The New York Times "Niall Ferguson has again written a brilliant book...In 400 pages you will have restocked your mind. Do it." —The Wall Street Journal “The Square and the Tower, in addition to being provocative history, may prove to be a bellwether work of the Internet Age.” —Christian Science Monitor Most history is hierarchical: it's about emperors, presidents, prime ministers and field marshals. It's about states, armies and corporations. It's about orders from on high. Even history "from below" is often about trade unions and workers' parties. But what if that's simply because hierarchical institutions create the archives that historians rely on? What if we are missing the informal, less well documented social networks that are the true sources of power and drivers of change? The 21st century has been hailed as the Age of Networks. However, in *The Square and the Tower*, Niall Ferguson argues that networks have always been with us, from the structure of the brain to the food chain, from the family tree to freemasonry. Throughout history, hierarchies housed in high towers have claimed to rule, but often real power has resided in the networks in the town square below. For it is networks that tend to innovate. And it is through networks that revolutionary ideas can contagiously spread. Just because conspiracy theorists like to fantasize about such networks doesn't mean they are not real. From the cults of ancient Rome to the dynasties of the Renaissance, from the founding fathers to Facebook, *The Square and the Tower* tells the story of the rise, fall and rise of

networks, and shows how network theory--concepts such as clustering, degrees of separation, weak ties, contagions and phase transitions--can transform our understanding of both the past and the present. Just as *The Ascent of Money* put Wall Street into historical perspective, so *The Square and the Tower* does the same for Silicon Valley. And it offers a bold prediction about which hierarchies will withstand this latest wave of network disruption--and which will be toppled.