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Nonlinear Approaches in Engineering Application Liming Dai

An Introduction to the Green Economy Adrian C. Newton 2014-08-13 The green economy is widely seen as a potential solution to current global economic and environmental crises, and a potential mechanism by which sustainable development might be achieved in practice. Considerable investments are now being made into the development of green technology, renewable energy, biodiversity conservation, resource efficiency, recycling of materials and green infrastructure. This textbook provides a comprehensive introduction to the green economy, using a strongly interdisciplinary approach based on environmental science, rather than treating it as a sub-set of economics. The scientific principles of sustainability are presented, which provide the foundations of the green economy, with a particular focus on systems-based approaches. Examples of real-world case studies are used to illustrate how the green economy can be achieved in practice. In this way, the authors provide a thorough overview of both the principles and practice of the green economy, drawing from a wide range of disciplines including ecology, geography, social science, psychology, sustainability science, environmental science, law and economics. The emphasis is on presenting results of the latest research, derived from leading scientific journals. Rather than focusing on a single definition of what constitutes a 'green economy', the book introduces readers to the diversity of opinion that exists, and engages them in what is an active, on-going debate. This reflects the fact that many aspects of the green economy, and sustainable development more generally, are currently contested. In particular, the book will help readers to strengthen their ability to critically evaluate the evidence for and against the views presented, and to actively contribute to the future development of the green economy.

Ethics and climate change 2015-07-27 Climate change is the most significant moral and environmental issue of our time. This project seeks to help deepen explicit ethical reflection around the world on national responses to climate change by developing a publicly available record on national compliance with ethical obligations for climate change similar to the reports that are now available on national compliance with human rights obligations.

Achieving Science with CubeSats National Academies of Sciences, Engineering, and Medicine 2016-11-06 Space-based observations have transformed our understanding of Earth, its environment, the solar system and the universe at large. During past decades, driven by increasingly advanced science questions, space observatories have become more sophisticated and more complex, with costs often growing to billions of dollars. Although these kinds of ever-more-sophisticated missions will continue into the future, small satellites, ranging in mass between 500 kg to 0.1 kg, are gaining momentum as an additional means to address targeted science questions in a rapid, and possibly more affordable, manner. Within the category of small satellites, CubeSats have emerged as a space-platform defined in terms of (10 cm x 10 cm x 10 cm)- sized cubic units of approximately 1.3 kg each called "U's." Historically, CubeSats were developed as training projects to expose students to the challenges of real-world engineering practices and system design. Yet, their use has rapidly spread within academia, industry, and government agencies both nationally and internationally. In particular, CubeSats have caught the attention of parts of the U.S. space science community, which sees this platform, despite its inherent constraints, as a way to affordably access space and perform unique measurements of scientific value. The first science results from such CubeSats have only recently become available; however, questions remain regarding the scientific potential and technological promise of CubeSats in the future. Achieving Science with CubeSats reviews the current state of the scientific potential and technological promise of CubeSats. This report focuses on the platform's promise to obtain high- priority science data, as defined in recent decadal surveys in astronomy and astrophysics, Earth science and applications from space, planetary science, and solar and space physics (heliophysics); the science priorities identified in the 2014 NASA Science Plan; and the potential for CubeSats to advance biology and microgravity research. It provides a list of sample science goals for CubeSats, many of which address targeted science, often in coordination with other spacecraft, or use "sacrificial," or high-risk, orbits that lead to the demise of the satellite after critical data have been collected. Other goals relate to the use of CubeSats

as constellations or swarms deploying tens to hundreds of CubeSats that function as one distributed array of measurements.

Climate Change 2014 – Impacts, Adaptation and Vulnerability: Part B: Regional Aspects: Volume 2, Regional Aspects Intergovernmental Panel on Climate Change 2014-12-29
This latest Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) will again form the standard reference for all those concerned with climate change and its consequences, including students, researchers and policy makers in environmental science, meteorology, climatology, biology, ecology, atmospheric chemistry and environmental policy.

Proceedings of 2013 4th International Asia Conference on Industrial Engineering and Management Innovation (IEMI2013) Ershi Qi 2014-01-16 The purpose of the 4th International Asia Conference on Industrial Engineering and Management Innovation (IEMI 2013) is to bring together researchers, engineers and practitioners interested in the application of informatics to usher in new advances in the industrial engineering and management fields.

Geological Carbon Storage Stéphanie Vialle 2018-11-15 Geological Carbon Storage Subsurface Seals and Caprock Integrity Seals and caprocks are an essential component of subsurface hydrogeological systems, guiding the movement and entrapment of hydrocarbon and other fluids. Geological Carbon Storage: Subsurface Seals and Caprock Integrity offers a survey of the wealth of recent scientific work on caprock integrity with a focus on the geological controls of permanent and safe carbon dioxide storage, and the commercial deployment of geological carbon storage. Volume highlights include: Low-permeability rock characterization from the pore scale to the core scale Flow and transport properties of low-permeability rocks Fundamentals of fracture generation, self-healing, and permeability Coupled geochemical, transport and geomechanical processes in caprock Analysis of caprock behavior from natural analogues Geochemical and geophysical monitoring techniques of caprock failure and integrity Potential environmental impacts of carbon dioxide migration on groundwater resources Carbon dioxide leakage mitigation and remediation techniques Geological Carbon Storage: Subsurface Seals and Caprock Integrity is an invaluable resource for geoscientists from academic and research institutions with interests in energy and environment-related problems, as well as professionals in the field. Book Review: William R. Green, Patrick Taylor, Sven Treitel, and Moritz Fliedner, (2020), "Reviews," The Leading Edge 39: 214–216 Geological Carbon Storage: Subsurface Seals and Caprock Integrity, edited by Stéphanie Vialle, Jonathan Ajo-Franklin, and J. William Carey, ISBN 978-1-119-11864-0, 2018, American Geophysical Union and Wiley, 364 p., US\$199.95 (print), US\$159.99 (eBook). This volume is a part of the AGU/Wiley Geophysical Monograph Series. The editors assembled an international team of earth scientists who present a comprehensive approach to the major problem of placing unwanted and/or hazardous fluids beneath a cap rock seal to be impounded. The compact and informative preface depicts the nature of cap rocks and the problems that may occur over time or with a change in the formation of the cap rock. I have excerpted a quote from the preface that describes the scope of the volume in a concise and thorough matter. "Caprocks can be defined as a rock that prevents the flow of a given fluid at certain temperature, pressure, and chemical conditions. ... A fundamental understanding of these units and of their evolution over time in the context of subsurface carbon storage is still lacking." This volume describes the scope of current research being conducted on a global scale, with 31 of the 83 authors working outside of the United States. The studies vary but can be generalized as monitoring techniques for cap rock integrity and the consequence of the loss of that integrity. The preface ends by calling out important problems that remain to be answered. These include imaging cap rocks in situ, detecting subsurface leaks before they reach the surface, and remotely examining the state of the cap rock to avert any problems. Chapter 3 describes how newer methods are used to classify shale. These advanced techniques reveal previously unknown microscopic properties that complicate classification. This is an example of the more we know, the more we don't know. A sedimentologic study of the formation of shale (by far the major sedimentary rock and an important rock type) is described in Chapter 4. The authors use diagrammatic examples to illustrate how cap rocks may fail through imperfect seal between the drill and wall rock, capillary action, or a structural defect (fault). Also, the shale pore structures vary in size, and this affects the reservoir. There are descriptions of the pore structure in the Eagle Ford and Marcellus shales and several others. Pore structures are analyzed using state-of-the-art ultra-small-angle X-ray or neutron scattering. They determine that the overall porosity decreases nonlinearly with time. There are examples of cap rock performance under an array of diagnostic laboratory analyses and geologic field examples (e.g., Marcellus Formation). The importance of the sequestration of CO₂ and other contaminants highlights the significance of this volume. The previous and following chapters illuminate the life history of the lithologic reservoir seal. I would like to call out Chapter 14 in which the authors illustrate the various mechanisms by which a seal can fail and Chapter 15 in which the authors address the general problems of the effect of CO₂ sequestration on the environment. They establish a field test, consisting of a trailer and large tank of fluids with numerous monitoring instruments to replicate the effect of a controlled release of CO₂-saturated water into a shallow aquifer. This chapter's extensive list of references will be of interest to petroleum engineers, rock mechanics, and environmentalists. The authors of this volume present a broad view of the underground storage of CO₂. Nuclear waste and hydrocarbons are also considered for underground storage. There are laboratory, field, and in situ studies covering nearly all aspects of this problem. I cannot remember a study in which so many different earth science resources were applied to a single problem. The span of subjects varies from traditional geochemical analysis with the standard and latest methods in infrared and X-ray techniques, chemical and petroleum engineering, sedimentary mineralogy, hydrology, and geomechanical studies. This volume is essential to anyone working in this field as it brings several disciplines together to produce a comprehensive study of carbon sequestration. While the volume is well illustrated, there is a lack of color figures. Each chapter should have at least two color figures, or there should be several pages of color figures bound in the center of the volume. Many of the figures would be more meaningful if they had been rendered in color. Also, the acronyms are defined in the individual chapters, but it would be helpful to have a list of acronyms

after the extensive index. I recommend this monograph to all earth scientists but especially petroleum engineers, structural geologists, mineralogists, and environmental scientists. Since these chapters cover a broad range of studies, it would be best if the reader has a broad background. — Patrick Taylor Davidsonville, Maryland

Geo-Spatial Knowledge and Intelligence Hanning Yuan 2018-06-11 This two-volume set (CCIS 848 and CCIS 849) constitutes the thoroughly refereed proceedings of the 5th International Conference Geo-Spatial Knowledge and Intelligence, GSKI 2017, held in Chiang Mai, Thailand, in December 2018. The 142 full papers presented were carefully reviewed and selected from 579 submissions. They are organized in topical sections on smart city in resource management and sustainable ecosystem; spatial data acquisition through RS and GIS in resource management and sustainable ecosystem; ecological and environmental data processing and management; advanced geospatial model and analysis for understanding ecological and environmental process; applications of geo-informatics in resource management and sustainable ecosystem.

Opportunities in Intense Ultrafast Lasers National Academies of Sciences, Engineering, and Medicine 2018-01-31 The laser has revolutionized many areas of science and society, providing bright and versatile light sources that transform the ways we investigate science and enables trillions of dollars of commerce. Now a second laser revolution is underway with pulsed petawatt-class lasers (1 petawatt: 1 million billion watts) that deliver nearly 100 times the total world's power concentrated into a pulse that lasts less than one-trillionth of a second. Such light sources create unique, extreme laboratory conditions that can accelerate and collide intense beams of elementary particles, drive nuclear reactions, heat matter to conditions found in stars, or even create matter out of the empty vacuum. These powerful lasers came largely from U.S. engineering, and the science and technology opportunities they enable were discussed in several previous National Academies' reports. Based on these advances, the principal research funding agencies in Europe and Asia began in the last decade to invest heavily in new facilities that will employ these high-intensity lasers for fundamental and applied science. No similar programs exist in the United States. *Opportunities in Intense Ultrafast Lasers* assesses the opportunities and recommends a path forward for possible U.S. investments in this area of science.

Maintenance, Safety, Risk, Management and Life-Cycle Performance of Bridges Nigel Powers 2018-07-04 *Maintenance, Safety, Risk, Management and Life-Cycle Performance of Bridges* contains lectures and papers presented at the Ninth International Conference on Bridge Maintenance, Safety and Management (IABMAS 2018), held in Melbourne, Australia, 9-13 July 2018. This volume consists of a book of extended abstracts and a USB card containing the full papers of 393 contributions presented at IABMAS 2018, including the T.Y. Lin Lecture, 10 Keynote Lectures, and 382 technical papers from 40 countries. The contributions presented at IABMAS 2018 deal with the state of the art as well as emerging concepts and innovative applications related to the main aspects of bridge maintenance, safety, risk, management and life-cycle performance. Major topics include: new design methods, bridge codes, heavy vehicle and load models, bridge management systems, prediction of future traffic models, service life prediction, residual service life, sustainability and life-cycle assessments, maintenance strategies, bridge diagnostics, health monitoring, non-destructive testing, field testing, safety and serviceability, assessment and evaluation, damage identification, deterioration modelling, repair and retrofitting strategies, bridge reliability, fatigue and corrosion, extreme loads, advanced experimental simulations, and advanced computer simulations, among others. This volume provides both an up-to-date overview of the field of bridge engineering and significant contributions to the process of more rational decision-making on bridge maintenance, safety, risk, management and life-cycle performance of bridges for the purpose of enhancing the welfare of society. The Editors hope that these Proceedings will serve as a valuable reference to all concerned with bridge structure and infrastructure systems, including students, researchers and engineers from all areas of bridge engineering.

Wind Energy for Power Generation K. R. Rao 2019-10-17 This far-reaching resource covers a full spectrum of multi-faceted considerations critical for energy generation decision makers considering the adoption or expansion of wind power facilities. It contextualizes pivotal technical information within the real complexities of economic, environmental, practical and socio-economic parameters. This matrix of coverage includes case studies and analysis from developed and developing regions, including North America and Europe, Asia, Latin America, the Middle-East and Africa. Crucial issues to power generation professionals and utilities such as: capacity credits; fuel saving; intermittency; penetration limits; relative cost of electricity by generation source; growth and cost trends; incentives; and wind integration issues are addressed. Other economic issues succinctly discussed inform financial commitment to a project, including investment matrices, strategies for economic evaluations, econometrics of wind energy, cost comparisons of various investment strategies, and cost comparisons with other energy sources. Due to its encompassing scope, this reference will be of distinct interest to practicing engineers, policy and decision makers, project planners, investors and students working in the area of wind energy for power generation.

Air Pollution, Clean Energy and Climate Change Anilla Cherian 2022-04-04 **AIR POLLUTION, CLEAN ENERGY AND CLIMATE CHANGE** Anthropogenic climate change is a globally recognized threat multiplier. Yet, decades of intergovernmental negotiations have failed to curb toxic levels of fossil fuel energy-related air pollution which the World Health Organization (WHO) has identified as the world's largest, single environmental health risk. Lying in plain view are the troubling truths about the morbidity and ill-health burdens associated with anthropogenic climate change that are borne by those who have done the least to contribute to per capita emissions of greenhouse gas emissions. Ignoring the nexus between air pollution, lack of access to clean energy and climate adversities represents a collective failure of the UN's ambitious, universally agreed upon 2030 Sustainable Development Agenda (SDA) which pledged 'to leave no one behind'. This book highlights the air pollution crisis that emanates from the heavy reliance on polluting forms of energy and the urbanization of poverty in developing countries. It provides a framework for understanding why the broader sustainable development community needs to address the more neglected intersection between adverse climatic impacts and energy-related air pollution which devastates the lives of the poorest and most vulnerable amongst us,

especially young children, women and the elderly. It focuses on the importance of breaking down persistent global silos and goals on sustainable energy for all, and climate change reflected in the UN's 2030 SDA, and the 2015 Paris Agreement. Integrating clean air and climate mitigation measures that specifically include curbing short lived climate pollutants such as black carbon via innovative partnerships/modalities are seen as vital to clean energy and climate responsive action. This book argues that linked actions by non-nation state actors aimed at reducing air pollution and ameliorating short term climate pollutants in the most populous cities, particularly in countries like India where annual average particulate matter pollution levels consistently exceed WHO guidelines are essential in reducing grave health costs and disease burdens. Air Pollution, Clean Energy and Climate Change will be of particular interest to policy makers, researchers, environmental advocates, civil society stakeholders and practitioners who want to understand the urgency of addressing linkages between climate change, fossil fuel energy, air pollution and public health risks. The cover image is an oil painting by Anilla Cherian, which incorporates tree bark and twigs, and serves as a reminder of the daily energy sources used by millions who lack access to clean energy and are exposed to high levels of household air pollution. It is the second-part of a series, with the first one serving as the cover image to Energy and Global Climate Change (Cherian, 2015). Photograph of painting by Alison Sheehy Photography.

Global Developments in Literacy Research for Science Education Kok-Sing Tang 2018-01-19 This book highlights recent developments in literacy research in science teaching and learning from countries such as Australia, Brazil, China, Finland, Germany, Hong Kong, New Zealand, Norway, Singapore, Spain, South Africa, Sweden, Taiwan, and the United States. It includes multiple topics and perspectives on the role of literacy in enhancing science teaching and learning, such as the struggles faced by students in science literacy learning, case studies and evaluations of classroom-based interventions, and the challenges encountered in the science classrooms. It offers a critical and comprehensive investigation on numerous emerging themes in the area of literacy and science education, including disciplinary literacy, scientific literacy, classroom discourse, multimodality, language and representations of science, and content and language integrated learning (CLIL). The diversity of views and research contexts in this volume presents a useful introductory handbook for academics, researchers, and graduate students working in this specialized niche area. With a wealth of instructional ideas and innovations, it is also highly relevant for teachers and teacher educators seeking to improve science teaching and learning through the use of literacy.

Handbook on Cohesion Policy in the EU Simona Piattoni 2016-08-26 This Handbook covers all major aspects of EU Cohesion policy, one of the most significant areas of intervention of the European Union. Over five parts, It discusses this policy's history and governing principles; the theoretical approaches from which it can be assessed; the inter-institutional and multi-level dynamics that it tends to elicit; its practical implementation and impact on EU member states; its interactions with other EU policies and strategies; and the cognitive maps and narratives with which it can be associated. An absolute must for all students of the EU.

Climate Change 2013 – The Physical Science Basis Intergovernmental Panel on Climate Change 2014-03-24 This latest Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) will again form the standard scientific reference for all those concerned with climate change and its consequences, including students and researchers in environmental science, meteorology, climatology, biology, ecology and atmospheric chemistry. It provides invaluable material for decision makers and stakeholders: international, national, local; and in all branches: government, businesses, and NGOs. This volume provides: • An authoritative and unbiased overview of the physical science basis of climate change • A more extensive assessment of changes observed throughout the climate system than ever before • New dedicated chapters on sea-level change, biogeochemical cycles, clouds and aerosols, and regional climate phenomena • A more extensive coverage of model projections, both near-term and long-term climate projections • A detailed assessment of climate change observations, modelling, and attribution for every continent • A new comprehensive atlas of global and regional climate projections for 35 regions of the world

Research Handbook on Climate Governance Karin Bäckstrand 2015-11-27 The 2009 United Nations climate conference in Copenhagen is often represented as a watershed in global climate politics, when the diplomatic efforts to negotiate a successor agreement to the Kyoto Protocol failed and was replaced by a fragmented and decentralized climate governance order. In the post-Copenhagen landscape the top-down universal approach to climate governance has gradually given way to a more complex, hybrid and dispersed political landscape involving multiple actors, arenas and sites. The Handbook contains contributions from more than 50 internationally leading scholars and explores the latest trends and theoretical developments of the climate governance scholarship.

Datacenter Connectivity Technologies F CHANG 2019-02-15

Tax Policy Challenges in the 21st Century Karoline Spies 2014-10-07 The Major Developments in Tax Policy Steadily increasing globalization as well as the financial and economic crisis have brought major challenges for states in ensuring budgetary consolidation while maintaining sustainable economic growth. These developments have not only influenced political and economic discussions in the 21st century, but also raise new questions on the role of taxation in the economic policy environment. National taxation systems worldwide are subject to significant changes and it is assumed that they will develop in a more co-operative way in the near future. This book aims at identifying the major developments in tax policy in the 21st century on a national as well as on an international level and gives an in-depth analysis of the challenges and risks, but also of the opportunities connected to these developments. It covers numerous and discrete issues ranging from challenges in the VAT/GST area, the taxation of the financial sector, the fight against aggressive tax planning, tax abuse and tax evasion, tax integration within the EU, the development of transfer pricing rules, the increasing role of co-operative

compliance and good governance and the changing tax policies of developing and newly industrialized countries. The contributions in this book build upon a legal comparison of the national tax systems in the relevant fields, propose tax policy solutions where required and give ideas on how to go forward.

Handbook of Research on Emerging Pedagogies for the Future of Education: Trauma-Informed, Care, and Pandemic Pedagogy Bozkurt, Aras 2021-06-04 The COVID-19 pandemic caused educational institutions to close for the safety of students and staff and to aid in prevention measures around the world to slow the spread of the outbreak. Closures of schools and the interruption of education affected billions of enrolled students of all ages, leading to nearly the entire student population to be impacted by these measures. Consequently, this changed the educational landscape. Emergency remote education (ERE) was put into practice to ensure the continuity of education and caused the need to reinterpret pedagogical approaches. The crisis revealed flaws within our education systems and exemplified how unprepared schools were for the educational crisis both in K-12 and higher education contexts. These shortcomings require further research on education and emerging pedagogies for the future. The Handbook of Research on Emerging Pedagogies for the Future of Education: Trauma-Informed, Care, and Pandemic Pedagogy evaluates the interruption of education, reports best-practices, identifies the strengths and weaknesses of educational systems, and provides a base for emerging pedagogies. The book provides an overview of education in the new normal by distilling lessons learned and extracting the knowledge and experience gained through the COVID-19 global crisis to better envision the emerging pedagogies for the future of education. The chapters cover various subjects that include mathematics, English, science, and medical education, and span all schooling levels from preschool to higher education. The target audience of this book will be composed of professionals, researchers, instructional designers, decision-makers, institutions, and most importantly, main-actors from the educational landscape interested in interpreting the emerging pedagogies and future of education due to the pandemic.

Observational Assessments of Glacier Mass Changes at Regional and Global Level Michael Zemp 2021-03-26

Carbon Governance, Climate Change and Business Transformation Adam Bumpus 2014-07-17 Transformation to a low carbon economy is a central tenet to any discussion on the solutions to the complex challenges of climate change and energy security. Despite advances in policy, carbon management and continuing development of clean technology, fundamental business transformation has not occurred because of multiple political, economic, social and organisational issues. Carbon Governance, Climate Change and Business Transformation is based on leading academic and industry input, and three international workshops focused on low carbon transformation in leading climate policy jurisdictions (Canada, USA and the UK) under the international Carbon Governance Project (CGP) banner. The book pulls insights from this innovative collaborative network to identify the policy combinations needed to create transformative change. It explores fundamental questions about how governments and the private sector conceptualize the problem of climate change, the conditions under which business transformation can genuinely take place and key policy and business innovations needed. Broadly, the book is based on emerging theories of multi-levelled, multi-actor carbon governance, and applies these ideas to the real world implications for tackling climate change through business transformation. Conceptually and empirically, this book stimulates both academic discussion and practical business models for low carbon transformation.

Federal Register 2012-09

Advances in Cryptology – CRYPTO 2017 Jonathan Katz 2017-08-08 The three volume-set, LNCS 10401, LNCS 10402, and LNCS 10403, constitutes the refereed proceedings of the 37th Annual International Cryptology Conference, CRYPTO 2017, held in Santa Barbara, CA, USA, in August 2017. The 72 revised full papers presented were carefully reviewed and selected from 311 submissions. The papers are organized in the following topical sections: functional encryption; foundations; two-party computation; bitcoin; multiparty computation; award papers; obfuscation; conditional disclosure of secrets; OT and ORAM; quantum; hash functions; lattices; signatures; block ciphers; authenticated encryption; public-key encryption, stream ciphers, lattice crypto; leakage and subversion; symmetric-key crypto, and real-world crypto.

Methods of Critical Discourse Studies Ruth Wodak 2015-10-15 This is a sophisticated and nuanced introduction to critical discourse analysis (CDA) that covers a range of topics in an accessible, engaging style. With international examples and an interdisciplinary approach, readers gain a rich understanding of the many angles into critical discourse analysis, the fundamentals of how analysis works and examples from written texts, online data and images. This new edition: expands coverage of multimodality adds two new chapters on social media and analysis of online data supports learning with a guided introduction to each chapter includes a new and extended glossary Clearly written, practical and rigorous in its approach, this book is the ideal companion when embarking on research that focuses on discourse and meaning-making. Available with Perusall—an eBook that makes it easier to prepare for class Perusall is an award-winning eBook platform featuring social annotation tools that allow students and instructors to collaboratively mark up and discuss their SAGE textbook. Backed by research and supported by technological innovations developed at Harvard University, this process of learning through collaborative annotation keeps your students engaged and makes teaching easier and more effective. Learn more.

Handbook of the Politics of the Arctic Leif Christian Jensen 2015-09-25 The Arctic has again become one of the leading issues on the international foreign policy agenda, in a manner unseen since the Cold War. Drawing on the perspectives of geo-politics and international law, this Handbook offers fresh insights and perspectives on the most pressing issues, grouped under the headings of political ascendancy, climate and environmental issues, resources and energy, and the response and policies of affected countries.

Contemporary Famine Analysis Olivier Rubin 2015-12-11 This Brief provides some answers as to why famines continue to torment humankind here in the 21st century despite all our progress in food production, logistics, information dissemination and relief work. Contemporary famines are inherently political, and so the interesting question is not how

famines can be prevented, but why they are allowed to develop in the first place; only by understanding the latter, is there hope to eradicate major famines. The Brief assesses the various analytical approaches to the understanding of famine, from the classical approaches inspired by Thomas Malthus to the newer economic approaches based on Amartya Sen. While all approaches contribute with important insights on famine dynamics, they also struggle to capture the political dimension of contemporary famines. The Brief develops a political approach capable of addressing this important but messy political dimension of contemporary famines. The approach builds on principles of humanitarian accountability (the moral responsibility to alleviate suffering from famine) as well as political accountability (the interests and power relations involved in famine outcomes).

Mechanics of Structures and Materials XXIV Hong Hao 2016-11-30 *Mechanics of Structures and Materials: Advancements and Challenges* is a collection of peer-reviewed papers presented at the 24th Australasian Conference on the Mechanics of Structures and Materials (ACMSM24, Curtin University, Perth, Western Australia, 6-9 December 2016). The contributions from academics, researchers and practising engineers from Australasian, Asia-pacific region and around the world, cover a wide range of topics, including: • Structural mechanics • Computational mechanics • Reinforced and prestressed concrete structures • Steel structures • Composite structures • Civil engineering materials • Fire engineering • Coastal and offshore structures • Dynamic analysis of structures • Structural health monitoring and damage identification • Structural reliability analysis and design • Structural optimization • Fracture and damage mechanics • Soil mechanics and foundation engineering • Pavement materials and technology • Shock and impact loading • Earthquake loading • Traffic and other man-made loadings • Wave and wind loading • Thermal effects • Design codes *Mechanics of Structures and Materials: Advancements and Challenges* will be of interest to academics and professionals involved in Structural Engineering and Materials Science.

Science and the Global Environment Alan McIntosh 2016-09-03 *Case Studies for Integrating Science and the Global Environment* is designed to help students of the environment and natural resources make the connections between their training in science and math and today's complex environmental issues. The book provides an opportunity for students to apply important skills, knowledge, and analytical tools to understand, evaluate, and propose solutions to today's critical environmental issues. The heart of the book includes four major content areas: water resources; the atmosphere and air quality; ecosystem alteration; and global resources and human needs. Each of these sections features in-depth case studies covering a range of issues for each resource, offering rich opportunities to teach how various scientific disciplines help inform the issue at hand. Case studies provide readers with experience in interpreting real data sets and considering alternate explanations for trends shown by the data. This book helps prepare students for careers that require collaboration with stakeholders and co-workers from various disciplines. Includes global case studies using real data sets that allow readers to practice interpreting data and evaluating alternative explanations Focuses on critical skills and knowledge, encouraging readers to apply science and math to real world problems Employs a system-based approach, linking air, water, and land resources to help readers understand that cause-effect may be complex and solutions to environmental problems require multiple perspectives Includes special features such as links to video clips of scientists at work, boxed information, a solutions section at the end of each case study, and practice exercises Geomechanical and Petrophysical Properties of Mudrocks E.H. Rutter 2017-10-09 A surge of interest in the geomechanical and petrophysical properties of mudrocks (shales) has taken place in recent years following the development of a shale gas industry in the United States and elsewhere, and with the prospect of similar developments in the UK. Also, these rocks are of particular importance in excavation and construction geotechnics and other rock engineering applications, such as underground natural gas storage, carbon dioxide disposal and radioactive waste storage. They may greatly influence the stability of natural and engineered slopes. Mudrocks, which make up almost three-quarters of all the sedimentary rocks on Earth, therefore impact on many areas of applied geoscience. This volume focuses on the mechanical behaviour and various physical properties of mudrocks. The 15 chapters are grouped into three themes: (i) physical properties such as porosity, permeability, fluid flow through cracks, strength and geotechnical behaviour; (ii) mineralogy and microstructure, which control geomechanical behaviour; and (iii) fracture, both in laboratory studies and in the field.

Handbook of Environmental and Sustainable Finance Vikash Ramiah 2015-10-28 The use of financial concepts and tools to shape development is hardly new, but their recent adoption by advocates of sustainable environmental management has created opportunities for innovation in business and regulatory groups. The *Handbook of Environmental and Sustainable Finance* summarizes the latest trends and attitudes in environmental finance, balancing empirical research with theory and applications. It captures the evolution of environmental finance from a niche scholarly field to a mainstream subdiscipline, and it provides glimpses of future directions for research. Covering implications from the Kyoto and Paris Protocols, it presents an intellectually cohesive examination of problems, opportunities, and metrics worldwide. Introduces the latest developments in environmental economics, sustainable accounting work, and environmental/sustainable finance Explores the effects of environmental regulation on the economy and businesses Emphasizes research about the trade-environmental regulation nexus, relevant for economics and business students

The EU, the US and Global Climate Governance Christine Bakker 2016-02-17 This volume presents a critical analysis of transatlantic relations in the field of environmental governance and climate change. The work focuses on understanding the possible trends in the evolution of global environmental governance and the prospects for breaking the current impasse on climate action. Drawing on research involving experts from eleven different universities and institutes, the authors provide innovative analyses on policy measures taken by the EU and the US, the world's largest economic and commercial blocs, in a number of fields, ranging from general attitudes on environmental leadership with regard to climate change, to energy policies, new technologies for hydrocarbons extraction and carbon capture, as well as the effects of extreme weather events on climate-related political attitudes. The book examines the way in which the current attitudes of the EU and the US with regard to climate change will affect international cooperation and the

building of consensus on possible climate policies, and looks to the future for international environmental governance, arguably one of the most pressing concerns of civilisation today. This book, which is based on research carried out in the context of the EU-financed FP7 research project TRANSWORLD, will appeal to academics, policy makers and practitioners seeking a deeper understanding of the challenges resulting from climate change.

Commerce, Justice, Science, and Related Agencies Appropriations for 2015 United States. Congress. House. Committee on Appropriations. Subcommittee on Commerce, Justice, Science, and Related Agencies 2014

The Carbon Fix Stephanie Paladino 2016-11-18 Given the growing urgency to develop global responses to a changing climate, *The Carbon Fix* examines the social and equity dimensions of putting the world's forests—and, necessarily, the rural people who manage and depend on them—at the center of climate policy efforts such as REDD+, intended to slow global warming. The book assesses the implications of international policy approaches that focus on forests as carbon and especially, forest carbon offsets, for rights, justice, and climate governance. Contributions from leading anthropologists and geographers analyze a growing trend towards market principles and financialization of nature in environmental governance, placing it into conceptual, critical, and historical context. The book then challenges perceptions of forest carbon initiatives through in-depth, field-based case studies assessing projects, policies, and procedures at various scales, from informed consent to international carbon auditing. While providing a mixed assessment of the potential for forest carbon initiatives to balance carbon with social goals, the authors present compelling evidence for the complexities of the carbon offset enterprise, fraught with competing interests and interpretations at multiple scales, and having unanticipated and often deleterious effects on the resources and rights of the world's poorest peoples—especially indigenous and rural peoples. *The Carbon Fix* provides nuanced insights into political, economic, and ethical issues associated with climate change policy. Its case approach and fresh perspective are critical to environmental professionals, development planners, and project managers; and to students in upper level undergraduate and graduate courses in environmental anthropology and geography, environmental and policy studies, international development, and indigenous studies.

Computer Aided Verification Swarat Chaudhuri 2016-07-12 The two-volume set LNCS 9779 and LNCS 9780 constitutes the refereed proceedings of the 28th International Conference on Computer Aided Verification, CAV 2016, held in Toronto, ON, USA, in July 2016. The total of 46 full and 12 short papers presented in the proceedings was carefully reviewed and selected from 195 submissions. The papers were organized in topical sections named: probabilistic systems; synthesis; constraint solving; model checking; program analysis; timed and hybrid systems; verification in practice; concurrency; and automata and games.

The Emissions Gap Report 2013 United Nations Environment Programme 2015-02-20 This report confirms and strengthens the conclusions of previous analyses that current pledges and commitments fall short of set goals. It further says that, as emissions of greenhouse gases continue to rise rather than decline, it becomes less likely that emissions will be low enough by 2020 to be on a least-cost pathway towards meeting the 2° C target. As a result, after 2020, the world will have to rely on more difficult, costlier and riskier means of meeting the target. The further from the least-cost level in 2020, the higher these costs and the greater the risks will be. If the gap is not closed or significantly narrowed by 2020, the door to many options to limit temperature increase to 1.5° C at the end of this century will be closed, further increasing the need to rely on accelerated energy-efficiency increases and biomass with carbon capture and storage for reaching the target.

Sustainability Assessments of Buildings Umberto Berardi 2018-07-06 This book is a printed edition of the Special Issue "Sustainability Assessments of Buildings" that was published in *Sustainability*

Climate Change 2014 – Impacts, Adaptation and Vulnerability: Regional Aspects Intergovernmental Panel on Climate Change 2014-12-29 This latest Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) will again form the standard reference for all those concerned with climate change and its consequences, including students, researchers and policy makers in environmental science, meteorology, climatology, biology, ecology, atmospheric chemistry and environmental policy.

Climate Change, Extreme Events and Disaster Risk Reduction Suraj Mal 2017-12-05 This book discusses the science, causes, impacts and risk reduction strategies for climate change and disasters. It focuses on the use of traditional knowledge, new innovation and education to build a culture of safety and resilience at all levels in order to promote sustainable development goals in general and disaster risk reduction in particular. The global climate has changed substantially over the last century. There is strong evidence of global climate change in the form of increase in air and sea surface temperature, recession of glaciers, changes and shifting of climate regimes, increasing number of extreme events and sea levels changes. The increasing frequency of climate change induced disasters in particular is posing a threat to resilience, lives and livelihoods at global, regional and local levels. Major ecosystems of the world have experienced several climate induced disaster events in recent past. This book provides new insights into the occurrence and impacts of climatic extremes and strategies for disaster risk reduction. It includes studies on rainfall and temperature trends, floods and drought disasters, weather and climatic related disasters in mountains, changes in plant activities, risk assessment and responses in different ecosystems of the world. The book is particularly useful for environmental and disaster managers, researchers and graduate students, as well as policy makers.

Thinking Ahead - Essays on Big Data, Digital Revolution, and Participatory Market Society Dirk Helbing 2015-04-10 The rapidly progressing digital revolution is now touching the foundations of the governance of societal structures. Humans are on the verge of evolving from consumers to prosumers, and old, entrenched theories – in particular sociological and economic ones – are falling prey to these rapid developments. The original assumptions on which they are based are being questioned. Each year we produce as much data

as in the entire human history - can we possibly create a global crystal ball to predict our future and to optimally govern our world? Do we need wide-scale surveillance to understand and manage the increasingly complex systems we are constructing, or would bottom-up approaches such as self-regulating systems be a better solution to creating a more innovative, more successful, more resilient, and ultimately happier society? Working at the interface of complexity theory, quantitative sociology and Big Data-driven risk and knowledge management, the author advocates the establishment of new participatory systems in our digital society to enhance coordination, reduce conflict and, above all, reduce the “tragedies of the commons,” resulting from the methods now used in political, economic and management decision-making. The author Physicist Dirk Helbing is Professor of Computational Social Science at the Department of Humanities, Social and Political Sciences and an affiliate of the Computer Science Department at ETH Zurich, as well as co-founder of ETH's Risk Center. He is internationally known for the scientific coordination of the FuturICT Initiative which focuses on using smart data to understand techno-socio-economic systems. “Prof. Helbing has produced an insightful and important set of essays on the ways in which big data and complexity science are changing our understanding of ourselves and our society, and potentially allowing us to manage our societies much better than we are currently able to do. Of special note are the essays that touch on the promises of big data along with the dangers...this is material that we should all become familiar with!” Alex Pentland, MIT, author of *Social Physics: How Good Ideas Spread - The Lessons From a New Science* “Dirk Helbing has established his reputation as one of the leading scientific thinkers on the dramatic impacts of the digital revolution on our society and economy. *Thinking Ahead* is a most stimulating and provocative set of essays which deserves a wide audience.” Paul Ormerod, economist, and author of *Butterfly Economics* and *Why Most Things Fail*. “It is becoming increasingly clear that many of our institutions and social structures are in a bad way and urgently need fixing. Financial crises, international conflicts, civil wars and terrorism, inaction on climate change, problems of poverty, widening economic inequality, health epidemics, pollution and threats to digital privacy and identity are just some of the major challenges that we confront in the twenty-first century. These issues demand new and bold thinking, and that is what Dirk Helbing offers in this collection of essays. If even a fraction of these ideas pay off, the consequences for global governance could be significant. So this is a must-read book for anyone concerned about the future.” Philip Ball, science writer and author of *Critical Mass* “This collection of papers, brought together by Dirk Helbing, is both timely and topical. It raises concerns about Big Data, which are truly frightening and disconcerting, that we do need to be aware of; while at the same time offering some hope that the technology, which has created the previously unthought-of dangers to our privacy, safety and democracy can be the means to address these dangers by enabling social, economic and political participation and coordination, not possible in the past. It makes for compelling reading and I hope for timely action.” Eve Mitleton-Kelly, LSE, author of *Corporate Governance and Complexity Theory* and editor of *Co-evolution of Intelligent Socio-technical Systems*

Stranded Assets and the Environment Ben Caldecott 2018-05-11 Drawing on the work of leading researchers and practitioners from a range of disciplines, including economic geography, economics, economic history, finance, law, and public policy, this edited collection provides a comprehensive assessment of stranded assets and the environment, covering the fundamental issues and debates, including climate change and societal responses to environmental change, as well as its origins and theoretical basis. The volume provides much needed clarity as the discourse on stranded assets gathers further momentum. In addition to drawing on scholarly contributions, there are chapters from practitioners and analysts to provide a range of critical perspectives. While chapters have been written as important standalone contributions, the book is intended to systematically take the reader through the key dimensions of stranded assets as a topic of research inquiry and practice. The work adopts a broad based social science perspective for setting out what stranded assets are, why they are relevant, and how they might inform the decision-making of firms, investors, policymakers, and regulators. The topic of stranded assets is inherently multi-disciplinary, cross-sectoral, and multi-jurisdictional and the volume reflects this diversity. This book will be of great relevance to scholars, practitioners and policymakers with an interest in include economics, business and development studies, climate policy and environmental studies in general.