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Climate Vulnerability, Volume 1

Cryptoassets represent one of the most high profile financial products in the world, and fastest growing financial products in history. From Bitcoin, Ethereum and Ripple's XRP-so called "utility tokens" used to access financial services-to initial coin offerings that in 2017 rivalled venture capital in money raised for startups, with an estimated \$5.6 billion (USD) raised worldwide across 435 ICOs. All the while, technologists have hailed the underlying blockchain technology for these assets as potentially game changing applications for financial payments and record-keeping. At the same time, cryptoassets have produced considerable controversy. Many have turned out to be lacklustre investments for investors. Others, especially ICOs, have also attracted noticeable fraud, failing firms, and alarming lapses in information-sharing

with investors. Consequently, many commentators around the world have pressed that ICO tokens be considered securities, and that concomitant registration and disclosure requirements attach to their sales to the public. This volume assembles an impressive group of scholars, businesspersons and regulators to collectively write on cryptoassets. This volume represents perspectives from across the regulatory ecosystem, and includes technologists, venture capitalists, scholars, and practitioners in securities law and central banking.

Our world is changing at an accelerating rate. The global human population has grown from 6.1 billion to 7.1 billion in the last 15 years and is projected to reach 11.2 billion by the end of the century. The distribution of humans across the globe has also shifted, with more than 50 percent of the global population now living in urban areas, compared to 29 percent in 1950. Along with these

trends, increasing energy demands, expanding industrial activities, and intensification of agricultural activities worldwide have in turn led to changes in emissions that have altered the composition of the atmosphere. These changes have led to major challenges for society, including deleterious impacts on climate, human and ecosystem health. Climate change is one of the greatest environmental challenges facing society today. Air pollution is a major threat to human health, as one out of eight deaths globally is caused by air pollution. And, future food production and global food security are vulnerable to both global change and air pollution. Atmospheric chemistry research is a key part of understanding and responding to these challenges. The Future of Atmospheric Chemistry Research: Remembering Yesterday, Understanding Today, Anticipating Tomorrow summarizes the rationale and need for supporting a comprehensive U.S. research program in atmospheric chemistry; comments on the broad trends in laboratory, field, satellite, and modeling studies of atmospheric chemistry; determines the priority areas of research for advancing the basic science of atmospheric chemistry; and identifies the highest priority needs for improvements in the research infrastructure to address those priority research topics. This report describes the scientific advances over the past decade in six core areas of atmospheric chemistry: emissions, chemical transformation, oxidants, atmospheric dynamics and circulation, aerosol particles and clouds, and biogeochemical cycles and deposition. This material was developed for the NSF's Atmospheric Chemistry Program; however, the findings will be of interest to other agencies and programs that support atmospheric chemistry research.

Revised and updated in 2000, Basic Physical Chemistry for the At-

mospheric Sciences provides a clear, concise grounding in the basic chemical principles required for studies of atmospheres, oceans, and earth and planetary systems. Undergraduate and graduate students with little formal training in chemistry can work through the chapters and the numerous exercises within this book before accessing the standard texts in the atmospheric chemistry, geochemistry, and the environmental sciences. The book covers the fundamental concepts of chemical equilibria, chemical thermodynamics, chemical kinetics, solution chemistry, acid and base chemistry, oxidation-reduction reactions, and photochemistry. In a companion volume entitled Introduction to Atmospheric Chemistry (2000, Cambridge University Press) Peter Hobbs provides an introduction to atmospheric chemistry itself, including its applications to air pollution, acid rain, the ozone hole, and climate change. Together these two books provide an ideal introduction to atmospheric chemistry for a variety of disciplines.

This revised and updated study is about the atmosphere and humanity's influence on it. Following an analysis of the natural environment, it re-examines the sources of air pollution and its effects, including decline in health, damage to plants and animals, indoor pollution, and acid rain.

...Would serve as an excellent text for the more chemical elements of such (atmospheric chemistry) courses and occupy a prized place as a work of reference long after graduation.' The Times Higher Education Supplement .

This book presents WHO guidelines for the protection of public health from risks due to a number of chemicals commonly present in indoor air. The substances considered in this review, i.e.

benzene, carbon monoxide, formaldehyde, naphthalene, nitrogen dioxide, polycyclic aromatic hydrocarbons (especially benzo[a]pyrene), radon, trichloroethylene and tetrachloroethylene, have indoor sources, are known in respect of their hazardousness to health and are often found indoors in concentrations of health concern. The guidelines are targeted at public health professionals involved in preventing health risks of environmental exposures, as well as specialists and authorities involved in the design and use of buildings, indoor materials and products. They provide a scientific basis for legally enforceable standards.

This 2nd edition of *Understanding Our Environment* has been reworked and greatly updated, providing a modern introductory level text for students of pollution and environmental chemistry. The book describes the basic concepts in relation to the chemistry of the atmosphere, freshwaters, oceans and soils, as well as the ways in which pollutants behave in these media (exemplified by case studies based upon topical environmental problems). It also examines the transfer of pollutants between different environmental compartments, the monitoring of the environment, the ecological and human health effects of chemical pollution, economics and regulatory control. Again case studies are used throughout. This unique introductory text is essential reading for students on undergraduate and first year postgraduate courses dealing with pollution and environmental chemistry, as well as for scientists and engineers in industry, public service and consultancy who require a basic understanding of environmental processes.

#### Publisher Description

Los investigadores Rafael Escribano e Isabel Tanarro cuentan con

una larga experiencia en espectroscopia molecular y física del plasma, y se han centrado durante los últimos quince años en el estudio de sistemas de relevancia atmosférica y astrofísica. En este libro, presentan una serie de contribuciones de otros renombrados colegas a cerca de la atmósfera, la espectroscopia y la astronomía, la metodología y la descripción de técnicas empleadas en estos campos, así como los resultados actualizados de sus propias investigaciones. Esta obra incluye en definitiva algunos temas de gran interés tanto para la comunidad científica como para el público en general, como las recientes misiones espaciales a cometas, sucesos luminosos espectaculares en la alta atmósfera, o la controvertida cuestión del calentamiento global y el cambio climático.

This paper proposes a market solution to enhance the role of the financial sector in the green transition. Developing a secondary market for “brown exposures” can allow banks to dispose more quickly of stranded assets thereby increasing their capacity to finance green investments. Furthermore, newly created instruments - the brown assets backed securities (B-ABS) - can expand the diversification opportunities for specialized green investors and, thus, attract additional resources for new green investments. The experience of the secondary market for non-performing loans suggests that targeted policy and regulatory measures can simultaneously support the development of the secondary market for brown assets and green finance.

An engaging introduction to marine chemistry and the ocean's geochemical interactions with the solid earth and atmosphere, for students of oceanography.

This is a self-contained, concise, rigorous book introducing the reader to the basics of atmospheric thermodynamics. This new edition has been brought completely up to date and reorganized to improve the quality and flow of the material. The introductory chapters provide definitions and useful mathematical and physical notes to help readers understand the basics. The book then describes the topics relevant to atmospheric processes, including the properties of moist air and atmospheric stability. It concludes with a brief introduction to the problem of weather forecasting and the relevance of thermodynamics. Each chapter contains worked examples and student exercises, with solutions available to instructors on a password protected website at [www.cambridge.org/9780521796767](http://www.cambridge.org/9780521796767). The author has taught atmospheric thermodynamics for over 20 years and is a highly respected researcher. This book is an ideal text for short undergraduate courses taken as part of an atmospheric science, meteorology, physics or natural science program.

The state of the atmosphere influences the activities of modern society and the quality of life, which is evident in agricultural productivity, the health impact of exposure to gases, particles, and sunlight, and property damage associated with severe weather events. Principles of Atmospheric Science provides a comprehensive introduction to atmospheric science for undergraduate students in the physical sciences, as well as those seeking to understand how physics and chemistry manifest themselves in the atmospheric environment. The text presents atmospheric science as an application of fundamental scientific principles meshed with observation. The author identifies the fundamental concepts and principles related to atmospheric science, presenting students

with a

Mathematical modeling of atmospheric composition is a formidable scientific and computational challenge. This comprehensive presentation of the modeling methods used in atmospheric chemistry focuses on both theory and practice, from the fundamental principles behind models, through to their applications in interpreting observations. An encyclopaedic coverage of methods used in atmospheric modeling, including their advantages and disadvantages, makes this a one-stop resource with a large scope. Particular emphasis is given to the mathematical formulation of chemical, radiative, and aerosol processes; advection and turbulent transport; emission and deposition processes; as well as major chapters on model evaluation and inverse modeling. The modeling of atmospheric chemistry is an intrinsically interdisciplinary endeavour, bringing together meteorology, radiative transfer, physical chemistry and biogeochemistry, making the book of value to a broad readership. Introductory chapters and a review of the relevant mathematics make this book instantly accessible to graduate students and researchers in the atmospheric sciences. Atmospheric chemistry is one of the fastest growing fields in the earth sciences. Until now, however, there has been no book designed to help students capture the essence of the subject in a brief course of study. Daniel Jacob, a leading researcher and teacher in the field, addresses that problem by presenting the first textbook on atmospheric chemistry for a one-semester course. Based on the approach he developed in his class at Harvard, Jacob introduces students in clear and concise chapters to the fundamentals as well as the latest ideas and findings in the field. Jacob's aim is to show students how to use basic principles

of physics and chemistry to describe a complex system such as the atmosphere. He also seeks to give students an overview of the current state of research and the work that led to this point. Jacob begins with atmospheric structure, design of simple models, atmospheric transport, and the continuity equation, and continues with geochemical cycles, the greenhouse effect, aerosols, stratospheric ozone, the oxidizing power of the atmosphere, smog, and acid rain. Each chapter concludes with a problem set based on recent scientific literature. This is a novel approach to problem-set writing, and one that successfully introduces students to the prevailing issues. This is a major contribution to a growing area of study and will be welcomed enthusiastically by students and teachers alike.

This book takes an introductory look at the physics and chemistry of the atmosphere and the climate dynamics. It provides the basics in thermodynamics, fluid dynamics, radiation and chemistry and explains the most interesting problems existing in the study of the atmosphere of the Earth and planets. This book also offers the computer programs to solve these problems. Themes covered include the most recent evolution concerning the ozone hole, the carbon dioxide problem, and chaos theory.

A multitude of processes that operate in the upper atmosphere are revealed by detailed physical and mathematical descriptions of the interactions of particles and radiation, temperatures, spectroscopy and dynamics.

Introduction to Atmospheric Chemistry is a concise, clear review of the fundamental aspects of atmospheric chemistry. In ten succinct chapters, it reviews our basic understanding of the chem-

istry of the Earth's atmosphere and discusses current environmental issues, including air pollution, acid rain, the ozone hole, and global change. Written by a well-known atmospheric science teacher, researcher, and author of several established textbooks, this book is an introductory textbook for beginning university courses in atmospheric chemistry. Also suitable for self instruction, numerous exercises and solutions make this textbook accessible to students covering atmospheric chemistry as a part of courses in atmospheric science, meteorology, environmental science, geophysics and chemistry. Together with its companion volume, Basic Physical Chemistry for the Atmospheric Sciences (second edition 2000; Cambridge University Press), Introduction to Atmospheric Chemistry provides a solid introduction to atmospheric chemistry.

Atmospheric Science, Second Edition, is the long-awaited update of the classic atmospheric science text, which helped define the field nearly 30 years ago and has served as the cornerstone for most university curricula. Now students and professionals alike can use this updated classic to understand atmospheric phenomena in the context of the latest discoveries, and prepare themselves for more advanced study and real-life problem solving. This latest edition of Atmospheric Science, has been revamped in terms of content and appearance. It contains new chapters on atmospheric chemistry, the Earth system, the atmospheric boundary layer, and climate, as well as enhanced treatment of atmospheric dynamics, radiative transfer, severe storms, and global warming. The authors illustrate concepts with full-color, state-of-the-art imagery and cover a vast amount of new information in the field. Extensive numerical and qualitative exercises help stu-

dents apply basic physical principles to atmospheric problems. There are also biographical footnotes summarizing the work of key scientists, along with a student companion website that hosts climate data; answers to quantitative exercises; full solutions to selected exercises; skew-T log p chart; related links, appendices; and more. The instructor website features: instructor's guide; solutions to quantitative exercises; electronic figures from the book; plus supplementary images for use in classroom presentations. Meteorology students at both advanced undergraduate and graduate levels will find this book extremely useful. Full-color satellite imagery and cloud photographs illustrate principles throughout. Extensive numerical and qualitative exercises emphasize the application of basic physical principles to problems in the atmospheric sciences. Biographical footnotes summarize the lives and work of scientists mentioned in the text, and provide students with a sense of the long history of meteorology. Companion website encourages more advanced exploration of text topics: supplementary information, images, and bonus exercises.

The book gives in the first instance descriptions of different types of so-called environment chambers or photoreactors used mainly for the simulation and/or investigation of important chemical processes occurring in the atmosphere. The types of reactor described include outdoor and indoor chambers, temperature regulated chambers and glass and Teflon foil chambers. The practical use of chambers is demonstrated in contributions by leading scientists in the field of atmospheric chemistry using, in many cases, current results. The types of atmospherically relevant investigations described include the measurement of reactivities, the

measurement of radicals, the measurement of photolysis frequencies and products, kinetic and product studies on the oxidation of different types of hydrocarbons by important oxidant species (OH, NO<sub>3</sub>, O<sub>3</sub>), formation of secondary organic aerosol from hydrocarbon oxidation etc. A special section includes contributions from eastern European countries which highlight some of the environmental research being performed in these countries. An abridged version of a specially commissioned review by the JRC Ispra on the status of environmental research in eastern European countries is also included in this section.

An introduction to the economic and policy aspects of climate change that assumes no prior knowledge, this title covers the main policies needed to control climate change including carbon taxes, renewable energy subsidies and demand management.

Written by a leading specialist in the area of atmosphere/ocean science (AOS), the book presents an excellent introduction to this important topic. The goals of these lecture notes, based on courses presented by the author at the Courant Institute of Mathematical Sciences, are to introduce mathematicians to the fascinating and important area of atmosphere/ocean science (AOS) and, conversely, to develop a mathematical viewpoint on basic topics in AOS of interest to the disciplinary AOS community, ranging from graduate students to researchers. The lecture notes emphasize the serendipitous connections between applied mathematics and geophysical flows in the style of modern applied mathematics, where rigorous mathematical analysis as well as asymptotic, qualitative, and numerical modeling all interact to ease the understanding of physical phenomena. Reading these lecture notes does not require a previous course in fluid dynamics, although a



serious reader should supplement these notes with material such as the IPCC Report on sources, capture, transport, and storage of CO<sub>2</sub>, for researchers, policy-makers and engineers. The book is intended for graduate students and researchers working in interdisciplinary areas between mathematics and AOS. It is excellent for supplementary course reading or independent study.

Clearly written, global in approach, and theoretically broad-minded, this text is an ideal introduction to environmental economics. Assuming no prior knowledge of economics, the international author team introduces fundamental economic concepts as they relate to our environment. They then use the fundamental concepts to explore and assess current and potential policy responses to some of the major environmental issues of our time. Examples are drawn from all over the world and include such vital issues as climate change, natural resource use, waste management, water pollution, and loss of biodiversity.

In this book, Dewey tries to criticize and expand on the educational philosophies of Rousseau and Plato. Dewey's ideas were seldom adopted in America's public schools, although a number of his prescriptions have been continually advocated by those who have had to teach in them.

Contributor biographical information for An introduction to atmospheric physics / David G. Andrews. Bibliographic record and links to related information available from the Library of Congress catalog Biographical text provided by the publisher (may be incomplete or contain other coding). The Library of Congress makes no claims as to the accuracy of the information provided, and will

not maintain or otherwise edit/update the information supplied by the publisher. -- -- David Andrews has been a lecturer in Physics at Oxford University and a Physics tutor at Lady Margaret Hall, Oxford, for 20 years. During this time he has had extensive experience of teaching a wide range of physics courses, including atmospheric physics. This experience has included giving lectures to large student audiences and also giving tutorials to small groups. Tutorials, in particular, have given him insights into the kinds of problems that physics students encounter when learning atmospheric physics, and the kinds of topics that excite them. His broad teaching experience has also helped him introduce students to connections between topics in atmospheric physics and related topics in other areas of physics. He feels that it is particularly important to expose today's physics students to the excitement and challenges presented by the atmosphere and climate. He has also published a graduate textbook, *Middle Atmosphere Dynamics*, with J.R. Holton and C.B. Leovy (1987, Academic Press). He is a Fellow of the Royal Meteorological Society, a Member of the Institute of Physics, and a Member of the American Meteorological Society.

INORGANIC COMPOUNDS. HYDROCARBONS. ETHERS. ALCOHOLS. KETONES. ALDEHYDES. ORGANIC ACIDS. CARBOXYLIC ACIDS. HETEROCYCLIC OXYGEN COMPOUNDS. NITROGEN COMPOUNDS. SULFUR COMPOUNDS. HALOGENATED COMPOUNDS. ORGANOMETALLIC COMPOUNDS. CROSS INDEXES.

Fluid dynamics is fundamental to our understanding of the atmosphere and oceans. Although many of the same principles of fluid dynamics apply to both the atmosphere and oceans, textbooks

tend to concentrate on the atmosphere, the ocean, or the theory of geophysical fluid dynamics (GFD). This textbook provides a comprehensive unified treatment of atmospheric and oceanic fluid dynamics. The book introduces the fundamentals of geophysical fluid dynamics, including rotation and stratification, vorticity and potential vorticity, and scaling and approximations. It discusses baroclinic and barotropic instabilities, wave-mean flow interactions and turbulence, and the general circulation of the atmosphere and ocean. Student problems and exercises are included at the end of each chapter. Atmospheric and Oceanic Fluid Dynamics: Fundamentals and Large-Scale Circulation will be an invaluable graduate textbook on advanced courses in GFD, meteorology, atmospheric science and oceanography, and an excellent review volume for researchers. Additional resources are available at [www.cambridge.org/9780521849692](http://www.cambridge.org/9780521849692).

Based on more than 20 years of research and lecturing, Jordi Vil...-Guerau de Arellano and his team's textbook provides an excellent introduction to the interactions between the atmosphere and the land for advanced undergraduate and graduate students and a reference text for researchers in atmospheric physics and chemistry, hydrology, and plant physiology. The combination of the book, which provides the essential theoretical concepts, and the associated interactive Chemistry Land-surface Atmosphere Soil Slab (CLASS) software, which provides hands-on practical exercises and allows students to design their own numerical experiments, will prove invaluable for learning about many aspects of the soil-vegetation-atmosphere system. This book has a modular and flexible structure, allowing instructors to accommodate it to their own learning-outcome needs.

Environmental Organic Chemistry focuses on environmental factors that govern the processes that determine the fate of organic chemicals in natural and engineered systems. The information discovered is then applied to quantitatively assessing the environmental behaviour of organic chemicals. Now in its 2nd edition this book takes a more holistic view on physical-chemical properties of organic compounds. It includes new topics that address aspects of gas/solid partitioning, bioaccumulation, and transformations in the atmosphere. Structures chapters into basic and sophisticated sections Contains illustrative examples, problems and case studies Examines the fundamental aspects of organic, physical and inorganic chemistry - applied to environmentally relevant problems Addresses problems and case studies in one volume 'Measurement Methods in Atmospheric Sciences provides a comprehensive overview of in-situ and remote sensing measurement techniques for probing the Earth's atmosphere. The methods presented in this book span the entire range from classical meteorology via atmospheric chemistry and micrometeorological flux determination to Earth observation from space. Standard instruments for meteorological and air quality monitoring methods, as well as specialized instrumentation predominantly used in scientific experiments, are covered. The presented techniques run from simple mechanical sensors to highly sophisticated electronic devices. Special emphasis is on the rapidly evolving field of remote sensing techniques. Here, active ground-based remote sensing techniques such as SODAR and LIDAR find a detailed coverage. The book conveys the basic principles of the various observational and monitoring methods, enabling the user to identify the most appropriate method. An introductory chapter covers general



principles (e. g. inversion of measured data, available platforms, statistical properties of data, data acquisition). Later chapters each treat methods for measuring a specific property (e.g. humidity, wind speed, wind direction). Long chapters provide an introductory tabular list of the methods treated. More than 100 figures and 400 references, mostly to the recent scientific literature, aid the reader in reading up on the details of the various methods at hand. Recommendations at the end of each major chapter provide additional hints on the use of some instruments in order to facilitate the selection of the proper instrument for a successful measurement. A large number of national and international standards, providing precise guidelines for measuring and acquiring reliable, reproducible and comparable data sets are listed in the appendix. A dedicated index allows easy access to this valuable information. The book addresses undergraduate and graduate students in meteorological and atmospheric sciences, physical geography, ecology, environmental sciences, agriculture and related disciplines as well as scientists in the process of planning atmospheric measurements in field campaigns or working with data already acquired. Practitioners in environmental agencies and similar institutions will benefit from instrument descriptions and the extended lists in the appendix.' (Publisher)

Most people remember chemistry from their schooldays as largely incomprehensible, a subject that was fact-rich but understanding-poor, smelly, and so far removed from the real world of events and pleasures that there seemed little point, except for the most introverted, in coming to terms with its grubby concepts, spells, recipes, and rules. Peter Atkins wants to change all

that. In this Very Short Introduction to Chemistry, he encourages us to look at chemistry anew, through a chemist's eyes, in order to understand its central concepts and to see how it contributes not only towards our material comfort, but also to human culture. Atkins shows how chemistry provides the infrastructure of our world, through the chemical industry, the fuels of heating, power generation, and transport, as well as the fabrics of our clothing and furnishings. By considering the remarkable achievements that chemistry has made, and examining its place between both physics and biology, Atkins presents a fascinating, clear, and rigorous exploration of the world of chemistry - its structure, core concepts, and exciting contributions to new cutting-edge technologies. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter

exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design. Significantly increased coverage of capital cost estimation, process costing and economics. New chapters on equipment selection, reactor design and solids handling processes. New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography. Increased coverage of batch processing, food, pharmaceutical and biological processes. All equipment chapters in Part II revised and updated with current information. Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. Additional worked examples and homework problems. The most complete and up to date coverage of equipment selection. 108 realistic commercial design projects from diverse industries. A rigorous

pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website. Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors.

Based on his 40+ years of research and teaching, John Wyngaard's textbook is an excellent up-to-date introduction to turbulence in the atmosphere and in engineering flows for advanced students, and a reference work for researchers in the atmospheric sciences. Part I introduces the concepts and equations of turbulence. It includes a rigorous introduction to the principal types of numerical modeling of turbulent flows. Part II describes turbulence in the atmospheric boundary layer. Part III covers the foundations of the statistical representation of turbulence and includes illustrative examples of stochastic problems that can be solved analytically. The book treats atmospheric and engineering turbulence in a unified way, gives clear explanation of the fundamental concepts of modeling turbulence, and has an up-to-date treatment of turbulence in the atmospheric boundary layer. Student exercises are included at the ends of chapters, and worked solutions are available online for use by course instructors.

The International Law Commission was established in 1947 with a view to carrying out the responsibility of the General Assembly, under article 13(1)(a) of the Charter of the United Nations, to [i]nitate studies and make recommendations for the purpose of ... encouraging the progressive development of international law and its codification.[i] Since its first session in 1949, the Commission has considered a wide-range of topics of international law and

made a number of proposals for its codification and progressive development, some of which have served as the basis for the subsequent adoption of major multilateral treaties. The Yearbook of the International Law Commission contains the official records of the Commission and is an indispensable tool for the preservation of the legislative history of the documents emanating from the Commission, as well as for the teaching, study, dissemination and wider appreciation of the efforts undertaken by the Commission in the progressive development of international law and its codification. Volume II (Part One) reproduces the edited versions of the official documents considered by the Commission at the respective annual session.

Artificial Intelligence (AI) has become omnipresent in today's business environment: from chatbots to healthcare services to various ways of creating useful information. While AI has been increasingly used to optimize various creative and innovative processes, the integration of AI into products, services, and other operational procedures raises significant concerns across virtually all areas of intellectual property (IP) law. While AI has drawn extensive attention from IP experts globally, this is the first book providing a broad and comprehensive picture from the perspectives of the very nature of AI technology, its commercial implications, its interaction with different kinds of IP, IP administration, software and data, its social and economic impact on the innovation policy, and ultimately AI's eligibility as a legal entity.