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Land Subsidence in the United States CRC Press

In warfare, military geologists pursue five main categories of work: tactical and strategic terrain analysis, fortifications and tunneling, resource acquisition, defense installations, and field construction and logistics. In peace, they train for wartime operations and may be involved in peace-keeping and nation-building exercises. In addition to the introductory paper this volume includes 24 papers, covering selected aspects of the history of military geology from the early 19th century through the recent Persian Gulf war.

Energy Geotechnics Elsevier

The monograph offers a comprehensive discussion of the role of evaporites in hydrocarbon generation and trapping, and new information on low temperature and high temperature ores. It also provides a wealth of information on exploitable salts, in a comprehensive volume has been assembled and organized to provide quick access to relevant information on all matters related to evaporites and associated brines. In addition, there are summaries of evaporite karst hazards, exploitative methods and problems that can arise in dealing with evaporites in conventional and solution mining. This second edition has been revised and extended, with three new chapters focusing on ore minerals in different temperature settings and a chapter on meta-evaporites. Written by a field specialist in research and exploration, the book presents a comprehensive overview of the realms of low- and high-temperature evaporite evolution. It is aimed at earth science professionals, sedimentologists, oil and gas explorers, mining geologists as well as environmental geologists.

Mechanical Behaviour of Salt VII CRC Press

This book details the findings and suggestions from a NATO workshop that examined regional climate variability and its impacts in the Mediterranean area, which was held in Marrakech, Morocco, November 2006. This NATO workshop was set up to discuss the issues facing the region in general and the influence of chemical emissions and transformation in particular.

Materials in Nuclear Energy Applications CRC Press
Papers cover: laboratory and in-situ testing; coupled effects and permeability; creep damage and dilatancy; constitutive modelling; crushed salt behaviour; numerical modelling; storage and disposal projects; mining applications; case studies; and salt pillars and cavities.

The Mechanical Behavior of Salt – Understanding of THMC Processes in Salt CRC Press
First Published in 1998. Routledge is an imprint of Taylor & Francis, an informa company.

Solution Mining CRC Press
The UK became a net importer of natural gas in 2004 and by 2020 will import up to 90% of its requirements, leaving it vulnerable to increasing energy bills and risk of disruption to supply. New pipelines to Europe and improvements to interconnectors will meet some demand, but Government recognises the need for increased gas storage capacity: best met by the construction of underground storage facilities. Energy security has also raised the likelihood of a new generation of coal-fired power-stations, which to be environmentally viable, will require clean-coal technologies with near-zero greenhouse gas emissions. A key element of this strategy will be underground CO2 storage. This volume reviews the technologies and issues involved in the underground storage of natural gas and CO2, with examples from the UK and overseas. The potential for underground storage of other gases such as hydrogen, or compressed air linked to renewable sources is also reviewed.

U.S. Geological Survey Circular CRC Press
"Slurry Systems, Instrumentation to Solid-Liquid Separation"

Excavation, Support and Monitoring Geological Survey (USGS)
First published in 1998. This book offers a wealth of information on the rapidly expanding field of solution mining: yhe extraction of materials from the earth by leaching and fluid recovery. This is an introductory text for students and professional engineers that is comprehensive and emphases current practice and theory. Percolation leaching of fragmented ground is covered, as well as true and modified in situ teaching. Solution mining of gold, copper and uranium ores, several slats extracted from evaporates and brines, and sulfur are discussed. Mineral teaching chemistry and kinetics, hydrology (including flow equations for various wellfields and other fluid recovery systems), environmental containment and solution mining simulation models are also included.

Bulletin CRC Press
In this book are reported nine works related to land subsidence monitoring using remote sensing techniques. Land subsidence is a common phenomenon in many regions of the world, where it causes degradation of local ecosystems and disruption of economic activities. Its effects are more evident in densely populated areas in particular in low-lying territories such as river deltas and coastal areas where the combination of land subsidence and sea level rise increases the flooding risk. For this reason, the monitoring of ground deformations is a crucial step to obtain important information for the development of risk mitigation strategies. In the presented papers, the characteristics of land subsidence occurring in different study areas are described, and recent developments in the used methodologies for the monitoring of the ground displacements are discussed and validated also by means of ground-based data. Moreover, advantages and disadvantages of the adopted techniques are highlighted. The outcomes of these research works can provide national and local authorities with useful information for the implementation of integrated monitoring systems in the areas most affected by land subsidence.

Environment, Energy and Sustainable

Development MDPI

A unique opportunity to review the latest progress in an expanding area of interest: the Mechanical Behaviour of Salt. These Proceedings include over fifty papers and summaries describing the latest findings in ongoing studies from a number of research groups. For the 2007 conference, there was a particular focus on the understanding of thermal, mechanical, hydraulic and chemical coupled processes (THMC). Such processes are of specific interest when considering advanced problems in waste disposal, storage and mining. The book includes a number of themes: - laboratory and in-situ investigations modelling, e.g. derivation of constitutive equations - numerical computations and prediction of long-term behaviour - THMC processes in mining projects, storage and permanent disposal - case studies - geology - mining and storage applications and abandonment The International Conferences on the Mechanical Behaviour of Salt have a long tradition, being initiated in 1981 at The Pennsylvania State University, USA. The present conference, the sixth of the series, took place in Hannover, Germany, in May 2007. The conference brought together mining engineers, researchers, and university professors interested in the mechanical behaviour of salt, mostly from Europe and beyond.

Future Energy Conferences and Symposia Elsevier

The changing focus and approach of geomorphic research suggests that the time is opportune for a summary of the state of discipline. The number of peer-reviewed papers published in geomorphic journals has grown steadily for more than two decades and, more importantly, the diversity of authors with respect to geographic location and disciplinary background (geography, geology, ecology, civil engineering, computer science, geographic information science, and others) has expanded dramatically. As more good minds are drawn to geomorphology, and the breadth of the peer-reviewed literature grows, an effective summary of contemporary geomorphic knowledge becomes increasingly difficult. The fourteen volumes of this Treatise on Geomorphology will provide an important reference for users from undergraduate students looking for term paper topics, to graduate students starting a literature review for their thesis work, and professionals seeking a concise summary of a particular topic. Information on the historical development of diverse topics within geomorphology provides context for ongoing research; discussion of research strategies, equipment, and field methods, laboratory experiments, and numerical simulations reflect the multiple approaches to understanding Earth's surfaces; and summaries of outstanding research questions highlight future challenges and suggest productive new avenues for research. Our future ability to adapt to geomorphic changes in the critical zone very much hinges upon how well landform scientists comprehend the dynamics of Earth's diverse surfaces. This Treatise on Geomorphology provides a useful synthesis of the state of the discipline, as well as highlighting productive research directions, that Educators and students/researchers will find useful. Geomorphology has advanced greatly in the last 10 years to become a very interdisciplinary field. Undergraduate students looking for term paper topics, to graduate students starting a literature review for their thesis work, and professionals seeking a concise summary of a particular topic will find the answers they need in this broad reference work which has been designed and written to accommodate their diverse backgrounds and levels of understanding Editor-in-Chief, Prof. J. F. Shroder of the University of Nebraska at Omaha, is past president of the QG&G section of the Geological Society of America and present Trustee of the GSA Foundation, while being well respected in the geomorphology research community and having won numerous awards in the field. A host of noted international geomorphologists have contributed state-of-the-art chapters to the work. Readers can be guaranteed that every chapter in this extensive work has been critically reviewed for consistency and accuracy by the World expert Volume Editors and by the Editor-in-Chief himself No other reference work exists in the area of Geomorphology that offers the breadth and depth of information contained in this 14-volume masterpiece. From the foundations and history of geomorphology through to geomorphological innovations and computer modelling, and the past and future states of landform science, no "stone" has been left unturned!

Encyclopedia of Chemical Processing and Design

CRC Press
Approx.850 pages
Underground Injection Science and Technology Geological Society of London Analysis, Modeling & Design is the third volume of the five-volume set Rock Mechanics and Engineering and contains twenty-eight chapters from key experts in the following fields: - Numerical Modeling Methods; - Back Analysis; - Risk Analysis; - Design and Stability Analysis: Overviews; - Design and Stability Analysis: Coupling Process Analysis; - Design and Stability Analysis: Blast Analysis and Design; - Rock Slope Stability Analysis and Design; - Analysis and Design of Tunnels, Caverns and Stopes. The five-volume set "Comprehensive Rock Engineering", which was published in 1993, has had an important influence on the development of rock mechanics and rock engineering. Significant and extensive advances and achievements in these fields over the last 20 years now justify the publishing of a comparable, new compilation. Rock Mechanics and Engineering represents a highly prestigious, multi-volume work edited by Professor Xia-Ting Feng, with the editorial advice of Professor John A. Hudson. This new compilation offers an extremely wideranging and comprehensive overview of the state-of-the-art in rock mechanics and rock engineering and is composed of peer-reviewed, dedicated contributions by all the key experts worldwide. Key features of this set are that it provides a systematic, global summary of new developments in rock mechanics and rock engineering practices as well as looking ahead to future developments in the fields. Contributors are worldrenowned experts in the fields of rock mechanics and rock engineering, though younger, talented researchers have also been included. The individual volumes cover an extremely wide array of topics grouped under five overarching themes: Principles (Vol. 1), Laboratory and Field Testing (Vol. 2), Analysis, Modelling and Design (Vol. 3), Excavation, Support and Monitoring (Vol. 4) and Surface and Underground Projects (Vol. 5). This multi-volume work sets a new standard for rock mechanics and engineering compendia and will be the go-to resource for all engineering professionals and academics involved in rock mechanics and engineering for years to come.

Mineral Characterisation and Processing Springer Science & Business Media
Environment, Energy and Sustainable Development brings together 242 peer-reviewed papers presented at the 2013 International Conference on Frontiers of Energy and Environment Engineering, held in Xiamen, China, November 28-29, 2013.The main objective of this proceedings set is to take the environment-energydevelopments discussion a step further. Vo

Technical Progress Report for the Quarter ... CRC Press
In the current push to convert to renewable sources of energy, many issues raised years ago on the economics and the difficulties of siting energy storage are once again being raised today. When large amounts of wind, solar, and other renewable energy sources are added to existing electrical grids, efficient and manageable energy storage becomes a

Underground Gas Storage Academic Press
Chapters by a distinguished group of international authors on various aspects of Underground Injection Science and Technology are organized into seven sections addressing specific topics of interest. In the first section the chapters focus on the history of deep underground injection as well

regulatory issues, future trends and risk analysis. The next section contains ten chapters dealing with well testing and hydrologic modeling. Section 3, consisting of five chapters, addresses various aspects of the chemical processes affecting the fate of the waste in the subsurface environment. Consideration is given here to reactions between the waste and the geologic medium, and reactions that take place within the waste stream itself. The remaining four sections deal with experience relating to injection of, respectively, liquid wastes, liquid radioactive wastes in Russia, slurried solids, and compressed carbon dioxide. Chapters in Section 4, cover a diverse range of other issues concerning the injection of liquid wastes including two that deal with induced seismicity. In Section 5, Russian scientists have contributed several chapters revealing their knowledge and experience of the deep injection disposal of high-level radioactive liquid processing waste. Section 6 consists of five chapters that cover the technology surrounding the injection disposal of waste slurries. Among the materials considered are drilling wastes, bone meal, and biosolids. Finally, four chapters in Section 7 deal with questions relating to carbon dioxide sequestration in deep sedimentary aquifers. This subject is particularly topical as nations grapple with the problem of controlling the buildup of carbon dioxide in the atmosphere.* Comprehensive coverage of the state of the art in underground injection science and technology* Emerging subsurface waste disposal technologies* International scope

Bulletin Allied Publishers

This collection of papers on research into and management of underground structures in salt formations represents the state-of-the-art on applications of salt mechanics in mines and storage caverns for gas/hydrocarbon, radioactive waste and toxic waste disposal. The contributions cover laboratory experiments, constitutive numerical modeling and field investigations, and deal with creep, damage, thermo-hydro-mechanical and chemical-coupled effects, lessons learnt from real sites and structures and in-situ monitoring. The book is organized into eight topics: • Laboratory investigations and constitutive modeling • Coupled processes and hydro-chemical effects (THMC) • Field measurements and back-analyses • Numerical modeling • Dry mining, post-mining and backfilling • Liquid hydrocarbon storage and brine-production caverns • Gaseous hydrocarbon storage and compressed air energy storage • Hazardous and radioactive waste disposal Mechanical Behavior of Salt VII will appeal to academics, engineers and professionals involved in salt mechanics.

Information Circular Geological Society of America

Energy Geotechnics includes 97 technical papers presented at the 1st International Conference on Energy Geotechnics (ICEGT 2016, Kiel, Germany, 29-31 August 2016). The contributions provides significant advances and critical challenges facing the areas of fundamentals, constitutive and numerical modelling, testing techniques and energy geotechnics applications. Energy Geotechnics contains seven regular sessions and six minisymposia, with contributions on discrete and continuum based modelling as well as investigations based on experimental studies at various scales. The papers on discrete and continuum based modelling examine the behaviour of gas hydrate sediments, cyclic and Themo-Hydro-Mechanical (T-H-M) modelling of energy piles, non-linear behaviour of energy geo-storage and geo-structures, deformation of geomaterials, modelling of borehole heat exchangers and energy walls, analysis of hydraulic fracturing and discontinuities in reservoirs, engineering problems involving gas hydrates sediments, and modelling of environmental impact of energy geotechnical processes.

A Proposed Approach to Uncertainty Analysis CRC Press

Rock salt formations have long been recognized as a valuable resource - not only for salt mining but for construction of oil and gas storage caverns and for isolation of radioactive and other hazardous wastes. Current interest is fast expanding towards construction and re-use of solution-mined caverns for storage of renewable energy in the form of hydrogen, compressed air and other gases. Evaluating the long term performance and safety of such systems demands an understanding of the coupled mechanical behavior and transport properties of salt. This volume presents a collection of 60 research papers defining the state-of-the-art in the field. Topics range from fundamental work

on deformation mechanisms and damage of rock salt to compaction of engineered salt backfill. The latest constitutive models are applied in computational studies addressing the evolution and integrity of storage caverns, repositories, salt mines and entire salt formations, while field studies document ground truth at multiple scales. The volume is structured into seven themes: Microphysical processes and creep models Laboratory testing Geological isolation systems and geotechnical barriers Analytical and numerical modelling Monitoring and site-specific studies Cavern and borehole abandonment and integrity Energy storage in salt caverns The Mechanical Behavior of Salt X will appeal to graduate students, academics, engineers and professionals working in the fields of salt mechanics, salt mining and geological storage of energy and wastes, but also to researchers in rock physics in general.

Evaporites:Sediments, Resources and Hydrocarbons Psychology Press

Comprehensive discussion of the role of evaporites in hydrocarbon generation and trapping Excellent introduction in the field