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The Basins, Orogens and Evolution of the Southern Gulf of Mexico and Northern Caribbean
Petrel 2010
The Nature of the Firm in the Oil Industry
Petrel 20 Years
Advances in ocean bottom seismology
Petrel Workflow Tools Introduction Course
Petrel Fundamentals
Petrel Geology
Reservoir Engineering Course
Petrel* Seismic to Simulation Software
Multiscale Modeling of Deep-water Channel Deposits
Digital Oil
New Challenges in Rock Mechanics and Rock Engineering
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The Future of Geological Modelling in Hydrocarbon Development
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Modeling Uncertainty in Metric Space
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Quantifying Uncertainty in Subsurface Systems
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Petrel Fundamentals Course
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Petrel Introduction Course
Geologically Storing Carbon
Petrel Fundamentals Course
Hart's E & P.
Subaqueous Mass Movements and Their Consequences
3D Digital Geological Models
Petrel 2010
Oilfield Review
Mesozoic Resource Potential in the Southern Permian Basin
Geological Prior Information
Glaciogenic Reservoirs and Hydrocarbon Systems
Petrel Workflow Tools: Petrel reservoir engineering

WALSH COOPER

The Basins, Orogens and Evolution of the Southern Gulf of Mexico and Northern Caribbean Geological Society of London
Cementing is arguably the most important operation performed on a well. Well cementing technology is an amalgam of many interdependent scientific and engineering disciplines which are essential to achieve the primary goal of well cementing - zonal isolation. This textbook is a comprehensive and up-to-date reference concerning the application of these disciplines to cementing a well.``Well Cementing'' is envisioned as an upper-level university book, as well as a reference for practicing engineers and scientists. The first section of the book illustrates how the quality of the hydraulic seal provided by the cement sheath can affect well performance. The second section concentrates on the design phase of a cementing treatment, and various aspects of cement job execution are covered in the third section. The fourth section addresses cement job evaluation. The text is supported by many tables and figures, an extensive bibliography and an index. There are also chapters devoted to subjects which are currently of particular interest to the industry, including the prevention of annular gas migration, foamed cements, and cementing horizontal wellbores. The chemistry associated with well cementing is presented in detail.Most of the contributors to this volume are employees of Dowell Schlumberger, one of the leading companies in this field.
Petrel 2010 Geological Society of London
This volume brings together 17 comprehensive, data-rich analyses to provide an updated perspective on the Mexican Gulf of Mexico, Florida and northern Caribbean. The papers span a broad range of scales and disciplines from plate tectonic evolution to sub-basin scale analysis. Papers are broadly categorised into three themes: 1) geological evolution of the basins of the southern Gulf of Mexico in Mexico, Bahamas and Florida and their hydrocarbon potential; 2) evolution of the region’s Late Cretaceous to Neogene orogens and subsequent denudation history; and 3) geological evolution of the basins and crustal elements of the northern Caribbean. This book and its extensive data sets are essential for all academic and exploration geoscientists working in this area. Two large wall maps are

included as fold-outs.

The Nature of the Firm in the Oil Industry Geological Society of London

The 3D geological model is still regarded as one of the newest and most innovative tools for reservoir management purposes. The computer modelling of structures, rock properties and fluid flow in hydrocarbon reservoirs has evolved from a specialist activity to part of the standard desktop toolkit. The application of these techniques has allowed all disciplines of the subsurface team to collaborate in a common workspace. In today's asset teams, the role of the geological model in hydrocarbon development planning is key and will be for some time ahead. The challenges that face the geologists and engineers will be to provide more seamless interaction between static and dynamic models. This interaction requires the development of conventional and unconventional modelling algorithms and methodologies in order to provide more risk-assessed scenarios, thus enabling geologists and engineers to better understand and capture inherent uncertainties at each aspect of the geological model's life.

Petrel 20 Years Geological Society of London

New Challenges in Rock Mechanics and Rock Engineering includes the contributions presented at the ISRM European Rock Mechanics Symposium Eurock 2024 (Alicante, Spain, 15-19 July 2024), and explores cutting-edge advancements in rock mechanics and rock engineering. This comprehensive compilation covers various aspects of rock mechanics and rock engineering, including: rock properties, testing methods, infrastructure and mining rock mechanics, design analysis, stone heritage preservation, geophysics, numerical modeling, monitoring techniques, underground excavation support, risk assessment, and the application of EUROCODE-7 in rock engineering. Furthermore, it addresses areas like geomechanics for the oil and gas industry, applications of artificial intelligence, remote sensing methodologies and geothermal technology. New Challenges in Rock Mechanics and Rock Engineering covers the latest breakthroughs and tackles the new challenges in rock mechanics and rock engineering, is aimed at scientists and professionals in these fields, and serves as an essential resource for keeping up to date with industry trends and solutions.

Advances in ocean bottom seismology Stanford University

The Petrel E&P software platform started 20 years ago when Technoguide, a Norwegian startup based in Oslo, released the first version of Petrel 1.0 in December 1998. The Petrel platform has become an industry standard and has revolutionized the way we work in all domains. Today, the active global community of users continue to push the boundaries of subsurface understanding using the Petrel platform. In creating this special anniversary book, we want to take a moment to reflect on that history and to celebrate the many achievements we have made together with you—our customers and partners.

Petrel Workflow Tools Introduction Course Newnes

This GSL volume focuses on underwater or subaqueous landslides with the overarching goal of understanding how they affect society and the environment. The new research presented here is the result of significant advances made over recent years in directly monitoring submarine landslides, in standardising global datasets for quantitative analysis, constructing a global database, and leading international research projects. This volume demonstrates the breadth of investigation taking place into subaqueous landslides, and shows that while events like the recent ones in the Indonesian archipelago can be devastating they are at the smaller end of what the Earth has experienced in the past. Understanding the spectrum of subaqueous landslide processes, and therefore the potential societal impact, requires research across all spatial and temporal scales. This volume delivers a compilation of state-of-the-art papers covering topics from regional landslide databases to advanced techniques for in situ measurements, to numerical modelling of processes and hazards.

Petrel Fundamentals Frontiers Media SA

"In this course, you will create black oil fluid tables and rock physics functions in Petrel. You will learn how to make a simulation grid. In addition, you will import and design wells and add completion items. You will combine it all and submit it for simulation. You will also learn how to use powerful results viewing options inside Petrel"--P. 11.

Petrel Geology Stanford University

Geological prior information represents a new and emerging field within the geosciences. Prior information is the term used to describe previously existing knowledge that can be brought to bear on a new problem. This volume describes a range of methods that can be used to find solutions to practical and theoretical problems using geological prior information, and the nature of geological information that can be so employed.

Reservoir Engineering Course Routledge

Sedimentological models capture the processes and subsequent deposits that explain the distribution of facies within a depositional system. The first sedimentological models for deep-water depositional systems were portrayed as idealized shelf break to slope submarine basin sediment dispersal systems. These models were developed from ancient outcrop exposures (Mutti and Lucchi, 1972) and from the modern day seafloor (Normark, 1970, 1978). More recent model development has been based largely on observations from modern slope channels including the Amazon Channel (Pirmez and Imran; 2003), offshore West African (Abreu et al., 2003; Deptuck et al., 2003), and attempts at generalization from multiple studies (Mayall et al., 2006), as well as ancient outcrop studies (e.g., Brushy Canyon; Gardner et al., 2003). Concepts from these sedimentological models have been the principle foundation for development of quantitative geostatistical models. A geostatistical model adapts the conceptualization of facies distribution from the sedimentological model. This information is then coded into a three-dimensional, gridded computer model directly constrained to available data (i.e., wireline logs, core data, and seismic attributes). Geostatistical models developed for deep-water depositional systems have primarily focused on either sinuous channels confined by levees or erosional surfaces (e.g., Larue and Hovadik, 2006; Labourdette et al., 2007; Pyrcz et al., 2008; McHargue et al., 2010; Sylvester et al., 2010) or basin-floor or overbank lobes associated with loss of confinement from sinuous channels (Pyrcz et al., 2005; Wellner et al., 2006; Zhang et al., 2009). Although widely used, such geostatistical models have limited applicability in fitting all deep-water depositional systems, and cases exists that require modification of such models or creation of entirely new models. In this dissertation I show the importance of synthesizing sedimentological and geostatistical models based on observations from the data. The primary objectives of this dissertation are 1) to present methodologies to enable the creation of better sedimentological models from remote sensing data, and 2) to present a means to model depositional architectures for a system that cannot currently be captured with standard geostatistical modeling approaches. The main contributions are threefold. The first contribution, presented in Chapter 1, is a methodology designed to extract subseismic, lithologic information from inverted pre-stack seismic reflectivities. Also, in Chapter 1, the predictive power of this methodology is demonstrated on a dataset from the subsurface of the Molasse Basin in Upper Austria. Beyond this dissertation,

Bernhardt et al. (in review) adopted the methodology to support the development of a more predictive sedimentological model for the same dataset. The second contribution, presented in Chapter 2, is a new approach for building predictive quantitative spatial models for a deep-water channel belt, in which sand deposition is controlled by mass-transport-deposit-topography. This methodology leverages sedimentological interpretations derived from subseismic, lithologic information as presented in Chapter 1 and the sedimentological work of Bernhardt et al. (in review). The final contribution of this dissertation is presented in two outcrop studies. Chapters 3 and 4 utilize extensive data collected from deep-water channel outcrops to build digital outcrop models. The model from Chapter 3 is used to demonstrate the predictive power of pre-stack seismic-reflectivity data in interpreting the large-scale architecture of a heterolithic deep-water channel system exposed in the sea cliffs along Blacks Beach near La Jolla, California. Finally, the outcrop modeling study presented in Chapter 4 presents a methodology to capture structural and stratigraphic uncertainty in outcrop observations in order to analyze the three-dimensional channel morphology of the Cerro Toro deep-water channel belt exposed in Sierra del Toro outcrops in the Magallanes Basin of Chile. These four chapters are described in more detail below.

Petrel* Seismic to Simulation Software Geological Society of London

3D DIGITAL GEOLOGICAL MODELS Discover the practical aspects of modeling techniques and their applicability on both terrestrial and extraterrestrial structures A wide overlap exists in the methodologies used by geoscientists working on the Earth and those focused on other planetary bodies in the Solar System. Over the course of a series of sessions at the General Assemblies of the European Geosciences Union in Vienna, the intersection found in 3D characterization and modeling of geological and geomorphological structures for all terrestrial bodies in our solar system revealed that there are similar datasets and common techniques for the study of all planets—Earth and beyond—from a geological point-of-view. By looking at Digital Outcrop Models (DOMs), Digital Elevation Models (DEMs), or Shape Models (SM), researchers may achieve digital representations of outcrops, topographic surfaces, or entire small bodies of the Solar System, like asteroids or comet nuclei. 3D Digital Geological Models: From Terrestrial Outcrops to Planetary Surfaces has two central objectives, to highlight the similarities that geological disciplines have in common when applied to entities in the Solar System, and to encourage interdisciplinary communication and collaboration between different scientific communities. The book particularly focuses on analytical techniques on DOMs, DEMs and SMs that allow for quantitative characterization of outcrops and geomorphological features. It also highlights innovative 3D interpretation and modeling strategies that allow scientists to gain new and more advanced quantitative results on terrestrial and extraterrestrial structures. 3D Digital Geological Models: From Terrestrial Outcrops to Planetary Surfaces readers will also find: The first volume dedicated to this subject matter that successfully integrates methodology and applications A series of methodological chapters that provide instruction on best practices involving DOMs, DEMs, and SMs A wide range of case studies, including small- to large-scale projects on Earth, Mars, the 67P/Churyumov-Gerasimenko comet, and the Moon Examples of how data collected at surface can help reconstruct 3D subsurface models 3D Digital Geological Models: From Terrestrial Outcrops to Planetary Surfaces is a useful reference for academic researchers in earth science, structural geology, geophysics, petroleum geology, remote sensing, geostatistics, and planetary scientists, and graduate students studying in these fields. It will also be of interest for professionals from industry, particularly those in the mining and hydrocarbon fields.

Multiscale Modeling of Deep-water Channel Deposits CRC Press

"Glaciogenic reservoirs and hydrocarbon systems occur intermittently throughout the stratigraphic record, with particular prominence in Neoproterozoic, Late Ordovician, Permo-Carboniferous and Late Cenozoic strata. Recent interest in glaciogenic successions has been fuelled by hydrocarbon discoveries in ancient glaciogenic reservoirs in North Africa, the Middle East, Australia and South America. Glaciogenic deposits of Pleistocene age are noteworthy for their content of groundwater onshore and potentially prospective and/or hazardous gas accumulations offshore. The abundant imprints of Pleistocene glaciations in both hemispheres can be used to reconstruct complex histories of repeated ice cover and retreat, and glacier-bed interactions, thus informing our view on the dynamics of older ice caps and predictions of future glaciations. This volume aims to provide a better understanding of glaciogenic processes, their stratigraphic record and reservoir characteristics of glaciogenic deposits. The book comprises 3 overview papers and 16 original case studies of Neoproterozoic to Pleistocene successions on 6 continents and will be of interest to sedimentologists, glaciologists, geophysicists, hydrologists and petroleum geologists alike."-- P. 4 of cover.

Digital Oil Schlumberger

Carbon capture and geological storage (CCS) is presently the only way that we can make deep cuts in emissions from fossil fuel-based, large-scale sources of CO2 such as power stations and industrial plants. But if this technology is to be acceptable to the community, it is essential that it is credibly demonstrated by world-class scientists and engineers in an open and transparent manner at a commercially significant scale. The aim of the Otway Project was to do just this. Geologically Storing Carbon provides a detailed account of the CO2CRC Otway Project, one of the most comprehensive demonstrations of the deep geological storage or geosequestration of carbon dioxide undertaken anywhere. This book of 18 comprehensive chapters written by leading experts in the field is concerned with outstanding science, but it is not just a collection of scientific papers – it is about 'learning by doing'. For example, it explains how the project was organised, managed, funded and constructed, as well as the approach taken to community issues, regulations and approvals. It also describes how to understand the site: Are the rocks mechanically suitable? Will the CO2 leak? Is there enough storage capacity? Is monitoring effective? This is the book for geologists, engineers, regulators, project developers, industry, communities or anyone who wants to better understand how a carbon storage project really 'works'. It is also for people concerned with obtaining an in-depth appreciation of one of the key technology options for decreasing greenhouse emissions to the atmosphere.

New Challenges in Rock Mechanics and Rock Engineering Schlumberger

Firm-to-firm relationships, along with the overall structure of industry, have changed markedly over the past decades. Replacing the model of vertical integration with one of global business, firms have started to outsource more by using a wider global network. At the same time, they have begun to increase their control and coordination along the value chain to remain competitive, blurring the boundaries between companies. Understanding the nature of the firm and its role in coordinating the supply chain will help firms to better define global competitive strategies.. The challenges that lie ahead for global business render obsolete the traditional model of procuring each service without long-term supply chain management. Current trends suggest that in the future there will be even deeper supply

chain integration in most industries. The Nature of the Firm in the Oil Industry aims to facilitate the understanding of ‘the firm’ via the analysis of the specific relationship between international oil companies, which are among the world’s biggest firms and which act as ‘core system integrators’, and the oil services companies, which help to find, extract, produce and distribute oil along the petroleum industry supply chain. This relationship serves as an example of deep integration by core system integrators and provides insights into the change in the nature of the firm in the era of modern globalization. Aimed at researchers and academics, The Nature of the Firm in the Oil Industry offers a thorough examination of this relationship in an effort to shed light on the nature of the firm, both in the oil industry and in global business today. It is a humble attempt to better understand the firm in a crucial industry.

Petrel 2011 CSIRO PUBLISHING

Petrel seismic to simulation software helps increase resevoir performance by improving asset team productivity. Geophysicists, geologists and reservoir engineers can develop collaborative workflows and integrate operations to streamline processes.

Introduction Course John Wiley & Sons

Under the Earth's surface is a rich array of geological resources, many with potential use to humankind. However, extracting and harnessing them comes with enormous uncertainties, high costs, and considerable risks. The valuation of subsurface resources involves assessing discordant factors to produce a decision model that is functional and sustainable. This volume provides real-world examples relating to oilfields, geothermal systems, contaminated sites, and aquifer recharge. Volume highlights include: A multi-disciplinary treatment of uncertainty quantification Case studies with actual data that will appeal to methodology developers A Bayesian evidential learning framework that reduces computation and modeling time Quantifying Uncertainty in Subsurface Systems is a multidisciplinary volume that brings together five major fields: information science, decision science, geosciences, data science and computer science. It will appeal to both students and practitioners, and be a valuable resource for geoscientists, engineers and applied mathematicians. Read the Editors' Vox: eos.org/editors-vox/quantifying-uncertainty-about-earths-resources

Petrel 2010 John Wiley & Sons

"Petrel seismic to simulation software helps increase reservoir performance by improving asset team productivity. Geophysicists, geologists, and reservoir engineers can develop collaborative workflows and integrate operations to streamline processes"--Page [2].

The Future of Geological Modelling in Hydrocarbon Development MIT Press

How is digitalization of the offshore oil industry fundamentally changing how we understand work and ways of knowing? Digitalization sits at the forefront of public and academic conversation today, calling into question how we work and how we know. In Digital Oil, Eric Monteiro uses the Norwegian offshore oil and gas industry as a lens to investigate the effects of digitalization on embodied labor, and in doing so shows how our use of new digital technology transforms work and knowing. For years, roughnecks have performed the dangerous and unwieldy work of extracting the oil that lies three miles below the seabed along the Norwegian Continental Shelf. Today, the Norwegian oil industry is largely digital, operated by sensors and driven by data. Digital representations of physical processes inform work practices and decision-making with remotely operated, unmanned deep-sea facilities. Drawing on two decades of in-depth interviews, observations, news clips, and studies of this industry, Eric Monteiro dismantles the divide between the virtual and the physical in Digital Oil. What is gained or lost when objects and processes become algorithmic phenomena with the digital inferred from the physical? How can data-driven work practices and operational decision-making approximate qualitative interpretation, professional judgement, and evaluation? How are emergent digital platforms and infrastructures, as machineries of knowing, enabling digitalization? In answering these questions Monteiro offers a novel analysis of digitalization as an effort to press the limits of quantification of the qualitative.

Petrel 2010 Geological Society of London

"Petrel seismic to simulation software helps increase reservoir performance by improving asset team productivity. Geophysicists, geologists, and reservoir engineers can develop collaborative workflows and integrate operations to streamline processes"--P. [3].

Modeling Uncertainty in Metric Space

This book assembles the historical facts, people, and culture of Schlumberger as it recognizes the 90th anniversary of the first well log conducted in Pechelbronn, France, in 1927. It is a story that began with Conrad and Marcel Schlumberger, the sons of a successful French businessman in the textile industry. Originally, their father Paul was drawn more to the study of science and did not think the world of business would suit him. When Paul took over the family firm with great success, he did not abandon his interest in the sciences. Instead, he imparted his thirst for knowledge to his sons and provided the financial support they needed to pioneer a new field, subsurface metrology, the science of measurement. Armed with their father’s support, Conrad and Marcel set out on a journey that would have a lasting effect on the oil and gas industry. Today Schlumberger is the world’s leading provider of technology for reservoir characterization, drilling, production, and processing to the oil and gas industry. Working in more than 85 countries and employing approximately 100,000 people who represent over 140 nationalities, Schlumberger supplies the industry’s most comprehensive range of products and services, from exploration through production, and integrated pore to pipeline solutions that optimize hydrocarbon recovery to deliver reservoir performance. Schlumberger seeks to become the best-run company in the world by leveraging its established strengths in technology, people, and size and focusing its actions in four areas—growth, returns, integrity, and engagement. Schlumberger has weathered the vagaries of the oil and gas industry by maintaining a clearly defined identity, investing the time to understand its customers and investors, and possessing a willingness to change. The qualities that have defined the company for the last 90 years will serve it well as we look to the future in an industry that, at the time this book was published, was navigating the longest industry downturn in the past 30 years. Though the industry’s cyclic nature is a familiar one, the current situation is not the result of lower demand or other external factors that characterized previous downturns. This unique downturn has caused many consequences for the oil and gas industry, and Schlumberger hopes to lead the way to the future.

Petrel 2011

The Southern Permian Basin, as its name suggests, is a historical heartland for hydrocarbon production from the Palaeozoic Rotliegend interval. However, in this mature basin the Mesozoic presents further possibilities to offer resource security to NW Europe. Such opportunities include increasing efficiency in the production of discovered hydrocarbons, exploration for further hydrocarbons (both conventional and unconventional) and efficient exploration for, and production of, geothermal energy.

All these potential resources require a grounding in technically sound geoscience, via traditional scientific observation and the application of new technologies, to unlock their value. The main aim of this volume is to bring together the work of academics and industry workers to consider cross-border geoscience including contributions on Poland, Germany, The Netherlands, the United Kingdom and adjacent areas. The work presented intends to contribute to the development and discovery of further Mesozoic energy resources across the basin.

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