

Course Title Formation Evaluation Petrophysics

The essential resource to an integrated approach to reservoir modelling by highlighting both the input of data and the modelling results Reservoir Modelling offers a comprehensive guide to the procedures and workflow for building a 3-D model. Designed to be practical, the principles outlined can be applied to any modelling project regardless of the software used. The author — a noted practitioner in the field — captures the heterogeneity due to structure, stratigraphy and sedimentology that has an impact on flow in the reservoir. This essential guide follows a general workflow from data QC and project management, structural modelling, facies and property modelling to upscaling and the requirements for dynamic modelling. The author discusses structural elements of a model and reviews both seismic interpretation and depth conversion, which are known to contribute most to volumetric uncertainty and shows how large-scale stratigraphic relationships are integrated into the reservoir framework. The text puts the focus on geostatistical modelling of facies and heterogeneities that constrain the distribution of reservoir properties including porosity, permeability and water saturation. In addition, the author discusses the role of uncertainty analysis in the static model and its impact on volumetric estimation. The text also addresses some typical approaches to modelling specific reservoirs through a mix of case studies and illustrative examples and: Offers a practical guide to the use of data to build a successful reservoir model Draws on the latest advances in 3-D modelling software Reviews facies modelling, the different methods and the need for understanding the geological interpretation of cores and logs Presents information on upscaling both the structure and the properties of a fine-scale geological model for dynamic simulation Stresses the importance of an interdisciplinary team-based approach Written for geophysicists, reservoir geologists and petroleum engineers, Reservoir Modelling offers the essential information needed to understand a reservoir for modelling and contains the multidisciplinary nature of a reservoir modelling project.

Introduction to Mineralogy -- Introduction to Petroleum Geology -- Porosity and Permeability -- Formation Resistivity and Water Saturation -- Capillary Pressure -- Wettability -- Applications of Darcy's Law -- Naturally Fractured Reservoirs -- Effect of Stress on Reservoir Rock Properties -- Fluid-Rock Interactions -- Modeling and Simulations -- Appendix.

Hobsons Postgraduate Guide

AAPG Explorer

JPT, Journal of Petroleum Technology

Reservoir Formation Damage

Petroleum Engineering and Technology Schools

An indispensable tool, Theory, Measurement and Interpretation of Well Logs introduces the three primary phases of well-logging technology to engineering and geosciences students. This text offers an in-depth study of the electric, radioactive, and acoustic properties of sedimentary rocks. Mathematical and empirical models relate a formation property of interest to the property measured with the logging tool. Openhole logging techniques are covered, along with concepts of traditional and modern tools. ADDITIONAL RESOURCES: You may want to consider this related SPE training course: *Well Log Interpretation Essentials* *This book introduces in detail the physical and chemical phenomena and processes during petroleum production. It covers the properties of reservoir rocks and fluids, the related methods of determining these properties, the phase behavior of hydrocarbon mixtures, the microscopic mechanism of fluids flowing through reservoir rocks, and the primary theories and methods of enhancing oil recovery. It also involves the up-to-date progress in these areas. It can be used as a reference by researchers and engineers in petroleum engineering and a textbook for students majoring in the area related with petroleum exploitation.*

Well Logging and Formation Evaluation

JPT

The Log Analyst

The Geological Interpretation of Well Logs

A Best Practice Guide

Exploration and characterization of conventional and unconventional reservoirs using seismic technologies are among the main activities of upstream technology groups and business units of oil and gas operators. However, these activities frequently encounter difficulties in quantitative seismic interpretation due to remaining confusion and new challenges in the fast developing field of seismic petrophysics. Seismic Petrophysics in Quantitative Interpretation shows how seismic interpretation can be made simple and robust by integration of the rock physics principles with seismic and petrophysical attributes bearing on the properties of both conventional (thickness, net/gross, lithology, porosity, permeability, and saturation) and unconventional (thickness, lithology, organic richness, thermal maturity) reservoirs. Practical solutions to existing interpretation problems in rock physics-based amplitude versus offset (AVO) analysis and inversion are addressed in the book to streamline the workflows in subsurface characterization. Although the book is aimed at oil and gas industry professionals and academics concerned with utilization of seismic data in petroleum exploration and production, it could also prove helpful for geotechnical and completion engineers and drillers seeking to better understand how seismic and sonic data can be more thoroughly utilized.

Ce travail débouche sur deux applications. D'une part, la base de données constituée permet de mieux comprendre les propriétés pétrophysiques en relation avec la pétrographie. D'autre part, la calibration pétrophysique en laboratoire a servi pour mettre au point une méthode de prédiction de lithofaciès et faciès pétrophysiques. Cette technique, basée sur des statistiques multivariées classiques permet d'interpréter les diagraphies de puits en intervalles non carottés.

Petrophysical and Petrographic Characterization, Mixed Carbonate - Siliciclastic - Evaporite Cyclic System, Upper Desmoinesian (Middle Pennsylvanian) of the Paradox Basin (SE Utah, U.S.A.)

Graduate Studies

Exploration Geophysics

Core Analysis

U.S. Geological Survey Bulletin

Petrophysics is the science of evaluating the rock and fluid properties of oil, gas and water reservoirs through the acquisition of physical samples, electrical, chemical, nuclear and magnetic data acquired by surface logging, downhole coring, and drilling and wireline sondes. The evaluation, analysis and interpretation of this data is as much an art as a science as it requires an understanding of geology, chemistry, physics, electronics, mechanics and drilling technology. The techniques have been developed over the last 100 years primarily by the oil and gas industry, but the principles are equally relevant in coal mining, hydrogeology and environmental science. This book is firmly aimed at students of geology and petroleum engineering looking for a practical understanding of the background and workflows required to complete a petrophysical study of a well, a reservoir or a field. Petrophysics is log analysis constrained by geology, and if we ignore the rocks we risk making poor investment decisions.

Physical Properties of Rocks: A Workbook is a symbiosis of a brief description of physical fundamentals of rock properties (based on typical experimental results and relevant theories and models) with a guide for practical use of different theoretical concepts. For this purpose a companion web site contains a selection of model based equations in excel worksheets for practical application and training by the user to work with his own data (or to "play" in order to demonstrate the effects of various input information and to demonstrate the effects of various input information in petrophysical work. In two special chapters the problem of relationships between petrophysical parameters based on various model concepts is presented as a foundation for combined interpretation. This part also contains the author's 'structured model'. The workbook is a result of the more than 40 years experience of the author in teaching at universities and industrial courses. Presents all practical relevant properties of rock in one volume
Experimental and theoretical fundamentals in a systematic framework Special focus on relationships between properties

First Break

Seismic Petrophysics in Quantitative Interpretation

A Practical Guide

Theory and Practice of Measuring Reservoir Rock and Fluid Transport Properties

Journal of Petroleum Technology

Formation Evaluation with Pre-Digital Well Logs covers the practical use of legacy materials for formation evaluation using wireline logging equipment from 1927 until the introduction of digital logging in the 1960s and ' 70s. The book provides powerful interpretation techniques that can be applied today when an analyst is faced with a drawer full of old " E logs." It arms the engineer, geologist and petrophysicist with the tools needed to profitably plan re-completions or in-fill drilling in old fields that may have been acquired for modern deeper and/or horizontal drilling. Includes more than 150 figures, log examples, charts and graphs Provides work exercises for the reader to practice log analysis and formation evaluation Presents an important source for academia, oil and gas professionals, service company personnel and the banking and asset evaluation teams at consultancies involved in reserve and other property evaluation

This hand guide in the Gulf Drilling Guides series offers practical techniques that are valuable to petrophysicists and engineers in their day-to-day jobs. Based on the author ' s many years of experience working in oil companies around the world, this guide is a comprehensive collection of techniques and rules of thumb that work. The primary functions of the drilling or petroleum engineer are to ensure that the right operational decisions are made during the course of drilling and testing a well, from data gathering, completion and testing, and thereafter to provide the necessary parameters to enable an accurate static and dynamic model of the reservoir to be constructed. This guide supplies these, and many other, answers to their everyday problems. There are chapters on NMR logging, core analysis, sampling, and interpretation of the data to give the engineer a full picture of the formation. There is no other single guide like this, covering all aspects of well logging and formation evaluation, completely updated with the latest techniques and applications. · A valuable reference dedicated solely to well logging and formation evaluation. · Comprehensive coverage of the latest technologies and practices, including, troubleshooting for stuck pipe, operational decisions, and logging contracts. · Packed with money-saving and time saving strategies for the engineer working in the field.

Openhole Log Analysis and Formation Evaluation

Cased Hole and Production Log Evaluation

Basic Well Log Analysis

Formation Evaluation with Pre-Digital Well Logs

Petrophysics

Many text books have been written on the subject "Exploration Geophysics". The majority of these texts focus on the theory and the mathematical treatment of the subject matter but lack treatment of practical aspects of geophysical exploration. This text is written in simple English to explain the physical meaning of jargon, or terms used in the industry. It describes how seismic data is acquired in 2-D and 3-D, how they are processed to convert the raw data to seismic vertical and horizontal cross sections, that are geologically meaningful, and how these and other data are interpreted to delineate a prospect. Workshops are included after each chapter and are designed to reinforce learning of the concepts presented. Key Features: Written in simple easy to understand language Heavily illustrated to aid in understanding the text End of chapter "Key words and workshop" The text includes several appendices and answers for the selected workshop problems

The petroleum geologist and engineer must have a working knowledge of petrophysics in order to find oil reservoirs, devise the best plan for getting it out of the ground, then start drilling. This book offers the engineer and geologist a manual to accomplish these goals, providing much-needed calculations and formulas on fluid flow, rock properties, and many other topics that are encountered every day. New updated material covers topics that have emerged in the petrochemical industry since 1997. Contains information and calculations that the engineer or geologist must use in daily activities to find oil and devise a plan to get it out of the ground Filled with problems and solutions, perfect for use in undergraduate, graduate, or professional courses Covers real-life problems and cases for the practicing engineer

Reservoir

Reservoir Modelling

SPE Formation Evaluation

Handbook of Mathematical Geosciences

SPE Reservoir Evaluation & Engineering

Core Analysis: A Best Practice Guide is a practical guide to the design of core analysis programs. Written to address the need for an updated set of recommended practices covering special core analysis and geomechanics tests, the book also provides unique insights into data quality control diagnosis and data utilization in reservoir models. The book's best practices and procedures benefit petrophysicists, geoscientists, reservoir engineers, and production engineers, who will find useful information on core data in reservoir static and dynamic models. It provides a solid understanding of the core analysis procedures and methods used by commercial laboratories, the details of lab data reporting required to create quality control tests, and the diagnostic plots and protocols that can be used to identify suspect or erroneous data. Provides a practical overview of core analysis, from coring at the well site to laboratory data acquisition and interpretation Defines current best practice in core analysis preparation and test procedures, and the diagnostic tools used to quality control core data Provides essential information on design of core analysis programs and to judge the quality and reliability of core analysis data ultimately used in reservoir evaluation Of specific interest to those working in core analysis, porosity, relative permeability, and geomechanics

Reservoir Formation Damage, Second edition is a comprehensive treatise of the theory and modeling of common formation damage problems and is an important guide for research and development, laboratory testing for diagnosis and effective treatment, and tailor-fit- design of optimal strategies for mitigation of reservoir formation damage. The new edition includes field case histories and simulated scenarios demonstrating the consequences of formation damage in petroleum reservoirs Faruk Civan, Ph.D., is an Alumni Chair Professor in the Mewbourne School of Petroleum and Geological Engineering at the University of Oklahoma in Norman. Dr. Civan has received numerous honors and awards, including five distinguished lectureship awards and the 2003 SPE Distinguished Achievement Award for Petroleum Engineering Faculty. Petroleum engineers and managers get critical material on evaluation, prevention, and remediation of formation damage which can save or cost millions in profits from a mechanistic point of view State-of-the-Art knowledge and valuable insights into the nature of processes and operational practices causing formation damage Provides new strategies designed to minimize the impact of and avoid formation damage in petroleum reservoirs with the newest drilling, monitoring, and detection techniques

A Journal of Formation Evaluation and Reservoir Description

Journal of Petroleum Technology : Official Publication of the Society of Petroleum Engineers of AIME.

Transactions of the SPWLA ... Annual Logging Symposium

Physics of Petroleum Reservoirs

Fifty Years of IAMG

Well Logging and Formation EvaluationElsevier

This publication is a general introduction to common openhole logging measurements, both wire line and MWD/LWD, and the interpretation of those measurements to determine the traditional analytical goals of porosity, fluid saturation, and lithology/mineralogy. It is arranged by the interpretation goals of the data, rather than by the underlying physics of the measurements. The appendix files contain digital versions of the data from the case studies, a summary guide to the measurements and their interpretation, and a simple spreadsheet containing some of the more common interpretation algorithms.

The SPWLA Journal of Formation Evaluation and Reservoir Description

A Workbook

Physical Properties of Rocks

Its Role in Hydrocarbon Resources Development

Springer Handbook of Petroleum Technology

This title details the operation and application of logging tools and services, with emphasis on the physical sense of what each tool does and how it does it. The book provides current, comprehensive solutions for both traditional and new oilfield operations problems to practicing petroleum and petrophysical engineers. Cased Hole and Production Log Evaluation provides long-awaited information on the uses of cased hole logging tools in the following recovery/workover applications: formation evaluation through casing; mechanical integrity, cement bond evaluation, and casing inspection surveys; flow evaluation in production and injection wells.

This Open Access handbook published at the IAMG's 50th anniversary, presents a compilation of invited path-breaking research contributions by award-winning geoscientists who have been instrumental in shaping the IAMG. It contains 45 chapters that are categorized broadly into five parts (i) theory, (ii) general applications, (iii) exploration and resource estimation, (iv) reviews, and (v) reminiscences covering related topics like mathematical geosciences, mathematical morphology, geostatistics, fractals and multifractals, spatial statistics, multipoint geostatistics, compositional data analysis, informatics, geocomputation, numerical methods, and chaos theory in the geosciences.

**An Official Publication of the Society of Petroleum Engineers
Petroleum Abstracts**

ERDA Energy Research Abstracts

Theory, Measurement, and Interpretation of Well Logs

This handbook provides a comprehensive but concise reference resource for the vast field of petroleum technology. Built on the successful book "Practical Advances in Petroleum Processing" published in 2006, it has been extensively revised and expanded to include upstream technologies. The book is divided into four parts: The first part on petroleum characterization offers an in-depth review of the chemical composition and physical properties of petroleum, which determine the possible uses and the quality of the products. The second part provides a brief overview of petroleum geology and upstream practices. The third part exhaustively discusses established and emerging refining technologies from a practical perspective, while the final part describes the production of various refining products, including fuels and lubricants, as well as petrochemicals, such as olefins and polymers. It also covers process automation and real-time refinery-wide process optimization. Two key chapters provide an integrated view of petroleum technology, including environmental and safety issues. Written by international experts from academia, industry and research institutions, including integrated oil companies, catalyst suppliers, licensors, and consultants, it is an invaluable resource for researchers and graduate students as well as practitioners and professionals.

Directory of Postgraduate Studies 2002

Reservoir Engineering