

Geophysics Dictionary By Sheriff

The fifth edition of the Glossary of Geology contains nearly 40,000 entries, including 3.600 new terms and nearly 13,000 entries with revised definitions from the previous edition. In addition to definitions, many entries include background information and aids to syllabication. The Glossary draws its authority from the expertise of more than 100 geoscientists in many specialties who reviewed definitions and added new terms. Precision farming, site infrastructure assessment, hydrologic monitoring, and environmental investigations — these are just a few current and potential uses of near-surface geophysical methods in agriculture. Responding to the growing demand for this technology, the Handbook of Agricultural Geophysics supplies a clear, concise overview of near-surface geophysical methods that can be used in agriculture and provides detailed descriptions of situations in which these techniques have been employed.

In diesem Band sind die geophysikalischen Methoden und Werkzeuge dargestellt. Mit einer leichtverständlichen, durch Prinzipskizzen veranschaulichten Methodenbeschreibung und Angaben zu den Anwendungsmöglichkeiten sollen auch fachfremde Leser angesprochen werden. Vorwiegend in den Grundlagenkapiteln findet der Geophysiker das spezielle Wissen, das er zum Einsatz der Methode oder zur Beurteilung von Untersuchungsergebnissen benötigt. Erläutert werden auch die Meßprinzipien und der Stand der Meßgerätetechnik, die Anlage und Durchführung der Feldarbeiten, die Bearbeitung und Interpretation der Meßdaten, die Qualitätssicherung sowie der personelle, technische und zeitliche Aufwand. Beispiele aus der Erkundungspraxis veranschaulichen die Anwendungsmöglichkeiten der Methoden.

Forensic Geoscience
Environmental Geology
Encyclopedic Dictionary of Exploration Gephysics
The Elements of Geophysical Prospecting
svyže 30 000 terminov

This book describes the application of non-destructive geophysical methods in subsurface archaeological features. Such non-destructive methods are magnetometry, electrical resistance, electromagnetic conductivity, magnetic susceptibility and ground penetrating radar. This book also includes the last improvements in instrumentation, data processing, and interpretations of the collected data sets leading to the rapid progress in geophysical applications in the field of archaeological investigations. The book also provides complete case-studies and archaeological interpretation obtained our results carried out in different localities around the world.

"This book examines the evolution of geophysical methods for exploring sedimentary basins by describing the internal structure and the nature of the formations found in such basins. The applicability of non-seismic methods is defined together with the conditions for their use. The seismic reflection method is fully described, distinguishing between the basic methods for handling routine problems and their adaptation to more specific or complex problems. The author then finally covers the emerging techniques of the future. Each fully illustrated chapter is a complete topic, easy to read with the mathematical derivations banished to the appendices." - back cover.

This illustrated handbook describes a broad spectrum of methods in the fields of remote sensing, geophysics, geology, hydrogeology, geochemistry, and microbiology designed to investigate landfill, mining and industrial sites. The descriptions provide information about the principle of the methods, applications and fundamentals. This handbook also deals with the stepwise procedure for investigating sites and common problems faced in efficient implementation of field operations.

Seismic Stratigraphy, Basin Analysis and Reservoir Characterisation

2D and 3D Techniques

Dictionary of Mathematical Geosciences

Applied Geophysics for Geologists and Engineers

Hydrogeophysics

This new edition of the well-established Kearey and Brooks text is fully updated to reflect the important developments in geophysical methods since the production of the previous edition. The broad scope of previous editions is maintained, with even greater clarity of explanations from the revised text and extensively revised figures. Each of the major geophysical methods is treated systematically developing the theory behind the method and detailing the instrumentation, field data acquisition techniques, data processing and interpretation methods. The practical application of each method to such diverse exploration applications as petroleum, groundwater, engineering, environmental and forensic is shown by case histories. The mathematics required in order to understand the text is purposely kept to a minimum, so the book is suitable for courses taken in geophysics by all undergraduate students. It will also be of use to postgraduate students who might wish to include geophysics in their studies and to all professional geologists who wish to discover the breadth of the subject in connection with their own work.

Developments in Economic Geology, 5: Principles of Induced Polarization for Geophysical Exploration focuses on the principles, methodologies, and approaches involved in induced polarization (IP), including anisotropism, electromagnetic coupling, and electrical circuits. The book first takes a look at resistivity principles, theory of IP, and laboratory work in IP. Concerns cover electrical measurements of rocks, anisotropism, early part of decay curve and the comparison with frequency effects, electrical models of induced polarization, electrical polarization, resistivities of earth materials, and resistivity exploration methods. The manuscript then elaborates on IP field equipment, telluric noise and electromagnetic coupling, IP field surveying, and drill-hole and underground surveying and the negative IP effect.

Discussions focus on differences between surface and subsurface methods, current-sending system in the field, telluric (earth) currents, electromagnetic coupling, design considerations, coupling of electrical circuits, design considerations, and signal-generating system. The manuscript ponders on the complex-resistivity method and interpretation of induced-polarization data, including grade estimation of mineralization using the IP method, complex-resistivity survey, signal detection capabilities of the complex-resistivity method, and disadvantages of the complex-resistivity method. The text is a valuable source of information for researchers wanting to study induced polarization.

This ground-breaking work is the first to cover the fundamentals of hydrogeophysics from both the hydrogeological and geophysical perspectives. Authored by leading experts and expert groups, the book starts out by explaining the fundamentals of hydrological characterization, with focus on hydrological data acquisition and measurement analysis as well as geostatistical approaches. The fundamentals of geophysical characterization are then at length, including the geophysical techniques that are often used for hydrogeological characterization. Unlike other books, the geophysical methods and petrophysical discussions presented here emphasize the theory, assumptions, approaches, and interpretations that are particularly important for hydrogeological applications. A series of hydrogeophysical case studies illustrate hydrogeophysical approaches for mapping hydrological units, estimation of hydrogeological parameters, and monitoring of hydrogeological processes. Finally, the book concludes with hydrogeophysical frontiers, i.e. on emerging technologies and stochastic hydrogeophysical inversion approaches.

The ABCs of Seismic Exploration and Processing

Signal Processing for Ge...

Encyclopedic Dictionary of Applied Geophysics

Иллюстрированный англо-русский, русско-английский энциклопедический словарь' terminov razvedočnoj i promyslovoj geofiziki Firmy Vudž

Der gläserne Untergrund

An Introduction to Applied and Environmental Geophysics, 2nd Edition, describes the rapidly developing field of near-surface geophysics. The book covers a range of applications including mineral, hydrocarbon and groundwater exploration, and emphasises the use of geophysics in civil engineering and in environmental investigations. Following on from the international popularity of the first edition, this new, revised, and much expanded edition contains additional case histories, and descriptions of geophysical techniques not previously included in such textbooks. The level of mathematics and physics is deliberately kept to a minimum but is described qualitatively within the text. Relevant mathematical expressions are separated into boxes to supplement the text. The book is profusely illustrated with many figures, photographs and line drawings, many never previously published. Key source literature is provided in an extensive reference section; a list of web addresses for key organisations is also given in an appendix as a valuable additional resource. Covers new techniques such as Magnetic Resonance Sounding, Controlled- Source EM, shear-wave seismic refraction, and airborne gravity and EM techniques Now includes radioactivity surveying and more discussions of down-hole geophysical methods; hydrographic and Sub-Bottom Profiling surveying; and UneXploded Ordnance detection Expanded to include more forensic, archaeological, glaciological, agricultural and bio-geophysical applications Includes more information on physio-chemical properties of geological, engineering and environmental materials Takes a fully global approach Companion website with additional resources available at www.wiley.com/go/reynolds/introduction2e Accessible core textbook for undergraduates as well as an ideal reference for industry professionals The second edition is ideal for students wanting a broad introduction to the subject and is also designed for practising civil and geotechnical engineers, geologists, archaeologists and environmental scientists who need an overview of modern geophysical methods relevant to their discipline. While the first edition was the first textbook to provide such a comprehensive coverage of environmental geophysics, the second edition is even more far ranging in terms of techniques, applications and case histories.

The twelve years since the third edition manuscript was finished have seen many new developments. Using seismic data for hydrocarbon production decisions has become almost routine. Visualization has become important in helping us better understand relationships. We now realize that most of what we formerly considered noise is actually geologic signal that we did not understand. We combine and interpret attributes and try to relate them to physical properties. AVO has become routine. We are beginning to quantify the anisotropic aspects of the real world. Multicomponent recording and interpretation of converted waves have proven their value in a number of situations. Downhole digitization of well logs has enormously increased the fidelity and amount of data about subsurface conditions. Recognition of hazards by noninvasive methods is growing. Our vocabulary has expanded because of geostatistics, neural networks, anisotropy, tomography, horizontal drilling, multicomponent acquisition, deep-water work, etc. These factors have all contributed to increasing our vocabulary.

The 2e of Seismic Stratigraphy and Depositional Facies Models summarizes basic seismic interpretation techniques and demonstrates the benefits of integrated reservoir studies for hydrocarbon exploration. Topics are presented from a practical point of view and are supported by well-illustrated case histories. The reader is taken from a basic level to more advanced study techniques. The presented modern geophysical techniques allow more accurate prediction of the changes in subsurface geology. Dynamics of sedimentary environments are discussed their relation to global controlling factors, and a link is made to high-resolution sequence stratigraphy. The interest in seismic stratigraphic techniques to interpret reflection datasets is well established. The advent of sophisticated subsurface reservoir studies and 4D monitoring for optimizing the hydrocarbon production in existing fields demonstrate the importance of the 3D seismic methodology. The added value of reflection seismics to the petroleum industry has clearly been proven over the last few decades. Seismic profiles and 3D cubes form a vast and robust data source to unravel the structure of the subsurface. Larger offsets and velocity anisotropy effects give access to more details on reservoir flow properties like fracture density, porosity and permeability distribution. Elastic inversion and modeling may tell something about the change in petrophysical parameters. Seismic investigations provide a vital tool for the delineation of subtle hydrocarbon traps, and they are the basis for understanding the regional basin framework and the stratigraphic subdivision. Seismic stratigraphy combines two very different scales of observation: the seismic and well control. The systematic approach applied in seismic stratigraphy explains why many workers are using the principles to evaluate their seismic observations. Discusses the link between seismic stratigraphic principles and sequence stratigraphy Provides techniques for seismic reservoir characterization as well as well control Analyzes inversion, AVO and seismic attributes

Groundwater Geophysics

Digital Imaging and Deconvolution

Handbook of Agricultural Geophysics

Seismic Stratigraphy and Depositional Facies Models

A Reference Guide

Covers the fundamentals of all currently used methods (seismic, electrical, electromagnetic, gravity, magnetic, borehole logging and remote sensing) and pays special attention to the seismic refraction and electrical resistivity techniques which are the ones most commonly used in engineering and groundwater geophysics. The main changes in this new edition of Applied Geophysics for Engineers and Geologists, apart from a general updating, and conversion to SI units, is a more extensive treatment of electromagnetic and induced polarisation methods, and of geophysical borehole logging. The seismic reflection method is also treated more fully in view of its great importance in petroleum prospecting. Problems, with answers are also included. Taken together, the changes are so great that this is virtually a new book, as is suggested by the change in title

Modern introduction to seismic data processing demonstrating exploration and global geophysics applications through real data and tutorial examples that can be demonstrated with the instructor's software of choice. The underlying physics and mathematics of analysis methods is presented, showing students the limitations and potential for creating models of the sub-surface.

A synthesis of years of interdisciplinary research and practice, the second edition of this bestseller continues to serve as a primary resource for information on the assessment, remediation, and control of contamination on and below the ground surface. Practical Handbook of Soil, Vadose Zone, and Ground-Water Contamination: Assessment, Prevention, and Remediation, Second Edition includes important new developments in site characterization and soil and ground water remediation that have appeared since 1995. Presented in an easy-to-read style, this book serves as a comprehensive guide for conducting complex site investigations and identifying methods for effective soil and ground water cleanup. Remediation engineers, ground water and soil scientists, regulatory personnel, researchers, and field investigators can access the latest data and summary tables to illustrate key advantages and disadvantages of various remediation methods.

Handbook of Field Methods and Case Studies

Seismic Data Analysis Techniques in Hydrocarbon Exploration

Use of Airborne, Surface, and Borehole Geophysical Techniques at Contaminated Sites

Encyclopedic Dictionary of Exploration Geophysics

Principles, Techniques and Applications

The use of diffraction imaging to complement the seismic reflection method is rapidly gaining momentum in the oil and gas industry. As the industry moves toward exploiting smaller and more complex conventional reservoirs and extensive new unconventional resource plays, the application of the seismic diffraction method to image sub-wavelength features such as small-scale faults, fractures and stratigraphic pinchouts is expected to increase dramatically over the next few years. "Seismic Diffraction" covers seismic diffraction theory, modeling, observation, and imaging. Papers and discussion include an overview of seismic diffractions, including classic papers which introduced the potential of diffraction phenomena in seismic processing; papers on the forward modeling of seismic diffractions, with an emphasis on the theoretical principles; papers which describe techniques for diffraction mathematical modeling as well as laboratory experiments for the physical modeling of diffractions; key papers dealing with the observation of seismic diffractions, in near-surface-, reservoir-, as well as crustal studies; and key papers on diffraction imaging.

This advanced undergraduate textbook comprehensively describes principal geophysical surveying techniques for environmental and engineering problems.

Dieses Buch vermittelt einen Einstieg in die geophysikalischen Erkundungsmethoden Seismik und Gravimetrie. Es erklärt, wie elastische Wellen und Unterschiede der Gesteinsdichte zur Sichtbarmachung von Strukturen im Untergrund genutzt werden können. Das Kapitel Seismik erläutert zunächst die Elastizität von Gesteinen und die verschiedenen Typen elastischer Wellen und deren Ausbreitung. Es folgt eine Einführung in die digitale Verarbeitung seismischer Signale, in der die Konzepte der Fourier-, Z-, Radon- und Wavelet-Transformationen erläutert werden ebenso wie die Anwendung von Methoden der Konvolution, Dekonvolution, Kreuz- und Autokorrelation auf seismische Daten. Aufbauend auf diesen theoretischen Grundlagen erfahren Sie, wie mittels Durchschallung mit seismischen Wellen Strukturen des Untergrunds tomografisch sichtbar gemacht werden können. Hierauf folgt eine Einführung in die Techniken der Reflexions- und Refraktionsseismik die erläutert, wie die jeweiligen Datensätze bearbeitet, interpretiert und veranschaulicht werden. Das Kapitel Gravimetrie fasst zunächst zusammen, wie man Schwerebeschleunigungen aus Schwerepotenzialen berechnet und wie das optimal an das Schwerfeld der Erde angepasste Rotationsellipsoid definiert ist. Abweichungen hiervon sind die gesuchten Schwereanomalien, die Rückschlüsse auf Strukturen im Untergrund erlauben. Ihre Identifizierung erfordert eine Reihe von Korrekturen und Reduktionen, die ausführlich erläutert werden. Abschließend erfahren Sie, wie Schwerearten interpretiert werden können - vom Vergleich mit der Schwerkirkung einfacher Modellkörper über Fourier- und Wavelet-Analyse bis hin zu dreidimensionalen Modell- und Inversionsrechnungen. Dieses Buch eignet sich hervorragend als Lehrbuch für Bachelor-Studierende der Geophysik und der Geowissenschaften im Allgemeinen, sowohl zur Begleitung einer Vorlesung als auch zum Selbststudium. Aufgaben mit durchgerechneten Antworten helfen zur Überprüfung des erlangten Verständnisses.

The Leading Edge

Subsurface Characterization and Monitoring Techniques: Solids and ground water, appendices A and B

State of the Art and Case Studies

An Introduction to Applied and Environmental Geophysics

Assessment, Prevention, and Remediation, Second Edition

This is the completely revised and updated version of the popular and highly regarded textbook, Applied Geophysics. It describes the physical methods involved in exploration for hydrocarbons and minerals, which include gravity, magnetic, seismic, electrical, electromagnetic, radio methods. All aspects of these methods are described, including basic theory, field equipment, techniques of data acquisition, data processing and interpretation, with the objective of locating commercial deposits of minerals, oil, and gas and determining their extent. In the fourth edition of Applied Geophysics, many changes have taken place in this field, mainly as the result of new techniques, better instrumentation, and increased use of computers in the field and in the interpretation of data. The authors describe these changes in considerable detail, including solving the inverse problem, specialized seismic methods, magnetotellurics as a practical exploration method, time-domain electromagnetic methods, increased use of gamma-ray spectrometers, and improved well-logging methods and interpretation.

This book presents the essential principles and applications of seismic oil-exploration techniques. It concisely covers all stages in exploration activities (data field acquisition, data processing and interpretation), supplementing the main text with a wealth of (>350) illustrations and examples on the physics of the applied principles, avoiding intricate mathematical treatment and lengthy theoretical reasoning. A further prominent feature is the inclusion of a separate chapter on 3D surveying techniques and another, equally important chapter on seismic digital signals and processing, presented in an accessible form. The book is designed to meet the needs of both the academic and industrial worlds. University students and employees of oil-exploration companies alike will find the book to be a valuable resource.

Seismic Data Analysis Techniques in Hydrocarbon Exploration explains the fundamental concepts and skills used to acquire seismic data in the oil industry and the step-by-step techniques necessary to extract the sections that trap hydrocarbons as well as seismic data interpreted to interpret seismic data and use that data for basin evaluation, structural modeling of a fault, reservoir characterization, rock physics analysis, field development, and production studies. Understanding and interpreting seismic data is critical to oil and gas exploration companies with a reference that covers the key principles of seismic data analysis will enhance their job knowledge, skills and performance. A fundamental grasp of seismic data enhances employability and aids scientists in functioning effectively when working with seismic data in industry. Geoscientists with more than 30 years of experience in hydrocarbon exploration and data analysis at O&G companies. More than 200 figures, photographs, and illustrations aid in the understanding of the fundamental concepts and techniques used to acquire seismic data Takes an approach to presenting the techniques and skills used to extract the geologic sections from acquired seismic data. Enhances the geoscientist's effectiveness when using seismic data for field development and other exploration and production studies

Archeogeophysics

Practical Handbook of Soil, Vadose Zone, and Ground-Water Contamination

Grundlagen der angewandten Geophysik - Seismik, Gravimetrie

With Historical Notes

Exploration Geophysics

This dictionary includes a number of mathematical, statistical and computing terms and their definitions to assist geoscientists and provide guidance on the methods and terminology encountered in the literature. Each technical term used in the explanations can be found in the dictionary which also includes explanations of basics, such as trigonometric functions and logarithms. There are also citations from the relevant literature to show the term's first use in mathematics, statistics, etc. and its subsequent usage in geosciences.

Edited by Reinhard Kirsch, this book demonstrates the use of geophysics for the detection and delineation of groundwater resources. As well as being an excellent reference, it could also be used as a textbook. An addition to the bookshelf of any geophysicist.

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

An Introduction to Geophysical Exploration

Seismic Hydrocarbon Exploration

Practical Seismic Data Analysis

Handbuch zur Erkundung des Untergrundes von Deponien und Altlasten

Applied Geophysics

Covers the basic ideas and methods used in seismic processing, concentrating on the fundamentals of seismic imaging and deconvolution. Many of the seismic methods in popular use today go back to the work of some of the great scientists of past centuries. The ideas are developed from the ground up. Most chapters in the book are followed by problem sets. Some exercises are designed to supplement the material presented in the text; others are meant to stimulate classroom discussions. There are few industrial-grade illustrations. Instead, both the text and the exercises deal mostly with simple examples that often can be solved with nothing more than a pencil and paper. Each chapter is as self-contained as possible to make it easier for a reader to concentrate on topics of particular interest. The book covers such basic topics as wave motion; digital imaging; digital filtering; various visualization aspects of the seismic reflection method; sampling theory; the frequency spectrum; synthetic seismograms; wavelets and wavelet processing; deconvolution; the need for continuing interaction between the seismic interpreter and the computer; seismic attributes; phase rotation; and seismic attenuation. The last of the 15 chapters gives a detailed mathematical overview. Digital Imaging and Deconvolution, nominated for the Association of Earth Science Editors award for the best geoscience publication of 2008-2009, will be of interest to professional geophysicists as well as graduate students and upper-level undergraduates in geophysics. The book also will be helpful to scientists and engineers in other disciplines who use digital signal processing to analyze and image wave-motion data in remote-detection applications. In particular, the methods described in this book are important in optical imaging, video imaging, medical and biological imaging, acoustical analysis, radar, and sonar.

The interest in seismic stratigraphic techniques to interpret reflection datasets is well established. The advent of sophisticated subsurface reservoir studies and 4D monitoring, for optimising the hydrocarbon production in existing fields, does demonstrate the importance of the 3D seismic methodology. The added value of reflection seismics to the petroleum industry has clearly been proven over the last decades. Seismic profiles and 3D cubes form a vast and robust data source to unravel the structure of the subsurface. It gets nowadays exploited in ever greater detail. Larger offsets and velocity anisotropy effects give for instance access to more details on reservoir flow properties like fracture density, porosity and permeability distribution, Elastic inversion and modelling may tell something about the change in petrophysical parameters. Seismic investigations provide a vital tool for the delineation of subtle hydrocarbon traps. They are the basis for understanding the regional basin framework and the stratigraphic subdivision. Seismic stratigraphy combines two very different scales of observation: the seismic and well-control. The systematic approach applied in seismic stratigraphy explains why many workers are using the principles to evaluate their seismic observations. The here presented modern geophysical techniques allow more accurate prediction of the changes in subsurface geology. Dynamics of sedimentary environments are discussed with its relation to global controlling factors and a link is made to high-resolution sequence stratigraphy. ' Seismic Stratigraphy Basin Analysis and Reservoir Characterisation ' summarizes basic seismic interpretation techniques and demonstrates the benefits of intergrated reservoir studies for hydrocarbon exploration. Topics are presented from a practical point of view and are supported by well-illustrated case histories. The reader (student as well as professional geophysicists, geologists and reservoir engineers) is taken from a basic level to more advanced study techniques. * Overview reflection seismic methods and its limitations. * Link between basic seismic stratigraphic principles and high resolution sequence stratigraphy. * Description of various techniques for seismic reservoir characterization and synthetic modelling. * Overview nversion techniques, AVO and seismic attributes analysis.

This work contains 30,000 terms with extended definitions. The vocabulary covers current methods of seismic exploration and production, processing and geological interpretation of seismic data, including seismic stratigraphy, as well as terms from geology, seismology, oceanography and CAEX.

Principles of Induced Polarization for Geophysical Exploration

Environmental and Engineering Geophysics

Application of Geophysical Methods to the Delineation of Paleochannels and Missing Confining Units Above the Castle Hayne Aquifer at U.S. Marine Corps Air Station, Cherry Point, North Carolina

Band 3: Geophysik

Geophysics for Sedimentary Basins