

## Geophysics Dictionary By Sheriff

*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 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 interpretation skills. It enhances the ability 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. Arming young geoscientists 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. Edited by a team of petroleum 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 easy-to-follow, step-by-step 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 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.*

*Glossary of Geology*

*svyše 30 000 terminov*

*An encyclopedic and an algorithm source-book*

*Handbook of Agricultural Geophysics*

*An Introduction to Geophysical Exploration*

Geophysics, the excellent exploration tool which traditionally uses the latest techniques has been in great demand, and has assisted by remarkable development of the methods which consist of gravimetry, electromagnetics and, the most important, seismic reflection. The book is presented like an encyclopedia. One may find an exact definition, illustrated with simple sketches, precise formulae & orders of magnitude & data which have so often been missing.

Seismic attributes play a key role in exploration and exploitation of hydrocarbons. In *Seismic Attributes for Prospect Identification and Reservoir Characterization* (SEG Geophysical Developments No. 11), Satinder Chopra and Kurt J. Marfurt introduce the physical basis, mathematical implementation, and geologic expression of modern volumetric attributes including coherence, dip/azimuth, curvature, amplitude gradients, seismic textures, and spectral decomposition. The authors demonstrate the importance of effective color display and sensitivity to seismic acquisition and processing. Examples from different basins illustrate the attribute expression of tectonic deformation, clastic depositional systems, carbonate depositional systems and diagenesis, drilling hazards, and reservoir characterization. The book is illustrated generously with color figures throughout. "Seismic Attributes" will appeal to seismic interpreters who want to extract more information from data; seismic processors and imagers who want to learn how their efforts impact subtle stratigraphic and fracture plays; sedimentologists, stratigraphers, and structural geologists who use large 3D seismic volumes to interpret their plays within a regional, basinwide context; and reservoir engineers whose work is based on detailed 3D reservoir models. Copublished with EAGE.

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.

Environmental Geology

Exploration Geophysics

Assessment, Prevention, and Remediation, Second Edition

Environmental and Engineering Geophysics

Principles, Techniques and Applications

*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.*

*"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 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, radioactivity, and well-logging 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 fourteen years or so since the first 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 improved methods of 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.*

*Static Corrections for Seismic Reflection Surveys*

*Archaeogeophysics*

*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*

*Hydrogeophysics*

*The ABCs of Seismic Exploration and Processing*

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.

A practical handbook for the petroleum geophysicist. Fundamental concepts are explained using heuristic descriptions of seismic modeling, deconvolution, depth migration, and tomography. Pitfalls in processing and contouring are described briefly. Applications include petroleum exploration of carbonate reefs, salt intrusions, and

overthrust faults. The book includes past, present, and possible future developments in time-lapse seismology, borehole geophysics, multicomponent seismology, and integrated reservoir characterization.

This is the completely updated revision of the highly regarded book *Exploration Seismology*. Available now in one volume, this textbook provides a complete and systematic discussion of exploration seismology. The first part of the book looks at the history of exploration seismology and the theory - developed from the first principles of physics. All aspects of seismic acquisition are then described. The second part of the book goes on to discuss data-processing and interpretation. Applications of seismic exploration to groundwater, environmental and reservoir geophysics are also included. The book is designed to give a comprehensive up-to-date picture of the applications of seismology. *Exploration Seismology's* comprehensiveness makes it suitable as a text for undergraduate courses for geologists, geophysicists and engineers, as well as a guide and reference work for practising professionals.

*Seismic Stratigraphy, Basin Analysis and Reservoir Characterisation*

*Seismic Hydrocarbon Exploration*

*Handbook of Field Methods and Case Studies*

*Essentials of Geophysical Data Processing*

*The Leading Edge*

This reference manual is designed to enable more geophysicists to appreciate static corrections, especially their limitations, their relationship with near-surface geology, and their impact on the quality of final interpreted sections. The book is addressed to those involved in data acquisition (datum static corrections), data processing (datum static and residual static corrections), and interpretation (the impact that unresolved static corrections, especially the long-wavelength or low-spatial-frequency component, have on the interpretation of the final section). Simple explanations of the underlying principles are included in an attempt to remove some of the mystique of static corrections. The principles involved are illustrated with simple models; these are supplemented with many data examples. This book details differences in approaches that must be considered among 2D, 3D, and crooked-line recordings as well as between P-wave and S-wave surveys. Static corrections are shown to be a simplified yet practical approach to modeling the effects of the near surface where a more correct wavefield or raypath-modeled method may not be efficiently undertaken. Chapters cover near-surface topography and geology; computation of datum static corrections; uphole surveys; refraction surveys; static corrections-limitations and effect on seismic data processes; residual static corrections; and interpretation aspects. An extensive index and a large list of references are included.

*Encyclopedic Dictionary of Exploration Geophysics*

*Encyclopedic Dictionary of Applied Geophysics*

*SEG Books*

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.

2D and 3D Techniques

Interpretation of Three-Dimensional Seismic Data, Seventh Edition

State of the Art and Case Studies

Digital Imaging and Deconvolution

Seismic Attributes for Prospect Identification and Reservoir Characterization

***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***

***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.*

*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.*

*Fundamentals of Geophysical Interpretation*

*A Reference Guide*

*Seismic Data Analysis Techniques in Hydrocarbon Exploration*

*Principles of Induced Polarization for Geophysical Exploration*

*Illjustrirovannyj anglo-russkij, russko-anglijskij ?nciklopedi?eskij slovar' terminov razvedo?noj i promyslovoj geofiziki Firmy Vudz*

*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.*

*A concise introduction to geophysical data processing - many of the techniques associated with the general field of time series analysis - for advanced students, researchers, and professionals. The textbook begins with calculus before transitioning to discrete time series via the sampling theorem, aliasing, use of complex sinusoids, development of the discrete Fourier transform from the Fourier series, and an overview of linear digital filter types and descriptions. Aimed at senior undergraduate and graduate students in geophysics, environmental science, and engineering with no previous background in linear algebra, probability, or statistics, this textbook draws scenarios and datasets from across the world of geophysics, and shows how data processing techniques can be applied to real-world problems using detailed examples, illustrations, and exercises (using MATLAB or similar computing environment). Online supplementary resources include datasets for students, and a solutions manual and all the figures from the book as PowerPoints for course instructors.*

*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 figures. The book concentrates 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 the aliasing problem, which is 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.***

***Practical Seismic Data Analysis***

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

***Problems in Exploration Seismology and Their Solutions***

***Exploration Seismology***

***Signal Processing for Ge...***

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

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.

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.

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

***Applied Geophysics for Geologists and Engineers***

***Encyclopedic Dictionary of Exploration Geophysics***

***Encyclopedic Dictionary of Applied Geophysics***

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

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.

Hardcover plus DVD

Geophysics for Sedimentary Basins

Applied Geophysics

Forensic Geoscience

AAPG Memoir 42, 7th Edition/SEG Investigation in Geophysics, No. 9

Handbook of Exploration Geophysics

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.

Encyclopedic Dictionary of Exploration Geophysics

The Elements of Geophysical Prospecting

Seismic Methods