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Potential Theory in Gravity and Magnetic Applications - Richard J. Blakely 1996-09-13
This text bridges the gap between the classic texts on potential theory and modern books on applied geophysics. It opens with an introduction to potential theory, emphasising those aspects particularly important to earth scientists, such as Laplace's equation, Newtonian potential, magnetic and electrostatic fields, and conduction of heat. The theory is then applied to the interpretation of gravity and magnetic anomalies, drawing on examples from modern geophysical literature. Topics explored include regional and global fields, forward modeling, inverse methods, depth-to-source estimation, ideal bodies, analytical continuation, and spectral analysis. The book includes numerous exercises and a variety of computer

subroutines written in FORTRAN. Graduate students and researchers in geophysics will find this book essential.

The History of Geophysics in Southern Africa - Johan de Beer 2016-01-25

Geophysics is a comparatively young science which only evolved as a distinct discipline during the 19th century. However, its phenomena (like earthquakes, tsunamis, volcanic eruptions and lightning) had been objects of fear, curiosity and speculation since ancient times. In this book, Johan de Beer and his research team reveal that geophysical activity in South Africa can be traced back to as early as 1488. This is a truly astonishing revelation which deserves to be firmly entrenched as part of the country's proud history. The book also discusses the history and formation of South African geophysical institutions that made a huge and seldom acknowledged contribution to the technological development of southern Africa.

Geophysical Inverse Theory and Regularization Problems - Michael S. Zhdanov 2002-04-24

This book presents state-of-the-art geophysical inverse theory developed in modern mathematical terminology. The book brings together fundamental results developed by the Russian mathematical school in regularization theory and combines them with the related research in geophysical inversion carried out in the West. It presents a detailed exposition of the methods of regularized solution of inverse problems based on the ideas of Tikhonov regularization, and shows the different forms of their applications in both linear and nonlinear methods of geophysical inversion. This text is the first to treat many kinds of inversion and imaging techniques in a unified mathematical manner. The book is divided in five parts covering the foundations of the inversion theory and its applications to the solution of different geophysical inverse problems, including potential field, electromagnetic, and seismic methods. The first part

is an introduction to inversion theory. The second part contains a description of the basic methods of solution of the linear and nonlinear inverse problems using regularization. The following parts treat the application of regularization methods in gravity and magnetic, electromagnetic, and seismic inverse problems. The key connecting idea of these applied parts of the book is the analogy between the solutions of the forward and inverse problems in different geophysical methods. The book also includes chapters related to the modern technology of geophysical imaging, based on seismic and electromagnetic migration. This volume is unique in its focus on providing a link between the methods used in gravity, electromagnetic, and seismic imaging and inversion, and represents an exhaustive treatise on inversion theory.

Remote Sensing of Volcanic Processes and Risk - Francesca Cigna 2021-03-17

Remote sensing data and methods are increasingly being implemented in assessments of volcanic processes and risk. This happens thanks to their capability to provide a spectrum of observation and measurement opportunities to accurately sense the dynamics, magnitude, frequency, and impacts of volcanic activity. This book includes research papers on the use of satellite, aerial, and ground-based remote sensing to detect thermal features and anomalies, investigate lava and pyroclastic flows, predict the flow path of lahars, measure gas emissions and plumes, and estimate ground deformation. The multi-disciplinary character of the approaches employed for volcano monitoring and the combination of a variety of sensor types, platforms, and methods that come out from the papers testify to the current scientific and technology trends toward multi-data and multi-sensor monitoring solutions. The added value of the papers lies in the demonstration of how remote sensing can improve our knowledge of volcanoes that pose a threat to local

communities; back-analysis and critical revision of recent volcanic eruptions and unrest periods; and improvement of modeling and prediction methods. Therefore, the selected case studies also demonstrate the societal impact that this scientific discipline can potentially have on volcanic hazard and risk management.

The NE Atlantic Region - G. Péron-Pinvidic 2017-10-30

The NAG-TEC project was a collaborative effort by the British Geological Survey, the Geological Survey of Denmark and Greenland, the Geological Survey of Ireland, the Geological Survey of the Netherlands, the Geological Survey of Northern Ireland, the Geological Survey of Norway, Iceland GeoSurvey and the Faroese Geological Survey (Jarðfeingi), along with a number of academic partners and significant support from industry. The main focus was to investigate the tectonic evolution of the region with a particular emphasis on basin evolution along conjugate margins. A key outcome was the development of a new tectonostratigraphic atlas and database that includes comprehensive geological and geophysical information relevant for understanding the Devonian to present evolution of the NE Atlantic margins. These provide the foundation upon which ongoing research and exploration of the area can build. This Special Publication provides some of the first scientific results and analysis based on the project, including regional stratigraphic analysis and correlations, crustal structure and interpretation of geophysical data sets, plate kinematics and the evolution of igneous provinces.

The Basins, Orogens and Evolution of the Southern Gulf of Mexico and Northern Caribbean - I. Davison 2021-03-25

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.

Mineral Resources - Manuel Bustillo Revuelta 2017-08-23

This comprehensive textbook covers all major topics related to the utilization of mineral resources for human activities. It begins with general concepts like definitions of mineral resources, mineral resources and humans, recycling mineral resources, distribution of minerals resources across Earth, and international standards in mining, among others. Then it turns to a classification of mineral resources, covering the main types from a geological standpoint. The exploration of mineral resources is also treated, including geophysical methods of exploration, borehole geophysical logging, geochemical methods, drilling methods, and mineral deposit models in exploration. Further, the book addresses the evaluation of mineral resources, from sampling techniques to the economic evaluation of mining projects (i.e. types and density of sampling, mean grade definition and calculation, Sichel's estimator, evaluation methods – classical and geostatistical, economic evaluation – NPV, IRR, and PP, estimation of risk, and software for evaluating mineral resources). It subsequently describes key mineral resource exploitation methods (open pit and underground mining) and the mineral processing required to obtain saleable products

(crushing, grinding, sizing, ore separation, and concentrate dewatering, also with some text devoted to tailings dams). Lastly, the book discusses the environmental impact of mining, covering all the aspects of this very important topic, from the description of diverse impacts to the environmental impact assessment (EIA), which is essential in modern mining projects.

Hydrogeologic Studies and Groundwater Monitoring in Snake Valley and Adjacent Hydrographic Areas, West-central Utah and East-central Nevada: report (304 pages), 4 Plates, Appendices and data tables - Hugh A. Hurlow 2015-02-01

This report (269 pages, 4 plates) presents hydrogeologic, groundwater-monitoring, and hydrochemical studies by the Utah Geological Survey (UGS) in Snake Valley, Tule Valley, and Fish Springs Flat in Millard and Juab Counties, west-central Utah. Data From the newly established UGS groundwater-monitoring network establish current baseline conditions, and will help quantify the effects of future variations in climate and groundwater pumping. New hydrochemical data show that groundwater quality is generally good, major-solute chemistry varies systematically from recharge to discharge areas, and suggest that most groundwater was recharged over one thousand years ago, implying low recharge rates and/or long or slow flow paths. Two aquifer tests yield estimates of transmissivity and storativity for the carbonate-rock and basin-fill aquifers. Variations in the potentiometric surface, hydrogeology, and hydrochemistry are consistent with the hypothesis of regional groundwater flow from Snake Valley northeast to Tule Valley and Fish Springs. Collectively, our work delineates groundwater levels, flow, and chemistry in Snake Valley and adjacent basins to a much greater degree than previously possible, and emphasizes the sensitivity of the groundwater system to possible increases in groundwater pumping.

Near-Surface Applied

Geophysics - Mark E. Everett 2013-04-25
Just a few meters below the Earth's surface lie features of great importance, from geological faults which can produce devastating earthquakes, to lost archaeological treasures! This refreshing, up-to-date book explores the foundations of interpretation theory and the latest developments in near-surface techniques, used to complement traditional geophysical methods for deep-exploration targets. Clear but rigorous, the book explains theory and practice in simple physical terms, supported by intermediate-level mathematics. Techniques covered include magnetics, resistivity, seismic reflection and refraction, surface waves, induced polarization, self-potential, electromagnetic induction, ground-penetrating radar, magnetic resonance, interferometry, seismoelectric and more. Sections on data analysis and inverse theory are provided and chapters are illustrated by case studies, giving students and professionals the tools to plan, conduct and analyze a near-surface geophysical survey. This is an important textbook for advanced-undergraduate and graduate students in geophysics and a valuable reference for practising geophysicists, geologists, hydrologists, archaeologists, and civil and geotechnical engineers.

Digital Imaging and Deconvolution - Enders A. Robinson 2008
Covering ideas and methods while concentrating on fundamentals, this book includes wave motion; digital imaging; digital filtering; visualization aspects of the seismic reflection method; sampling theory; the frequency spectrum; synthetic seismograms; wavelet processing; deconvolution; seismic attributes; phase rotation; and seismic attenuation.

International Mine Computing - 1988

Preview - 2009

Beginning with 1999 first issue of the year devoted to coverage of the International ASEG Conference and Exhibition.

3D, 4D and Predictive Modelling of Major Mineral Belts in Europe - Pär Weihed 2015-07-24

This book presents the results of the major EU project Promine. For the first time there is now a European database available on mineral deposits, as well as 3D, 4D and predictive models of major mineral belts in Europe: Fennoscandia (Skellefteå and Vihanti-Pyhäsalmi), the Fore-Sudetic basin (Kupferschiefer deposits in Poland and Germany), the Hellenic belt in northern Greece, and the Iberian Pyrite belt and Ossa Morena zone in Spain and Portugal. The book also describes the modelling techniques applied and how different types of software are used for three- and four-dimensional modelling. Furthermore, fundamental descriptions of how to build the database structure of three-dimensional geological data are provided and both 2D and 3D predictive models are presented for the main mineral belts of Europe.

U.S. Geological Survey Professional Paper - 1984

The Magnetic Field of the Earth's Lithosphere - R. A. Langel 1998-07-13

This 1998 book documents the collection, processing and analysis of satellite magnetic field data.

The Geology of Northwest Libya - Jam'īyah al-Lībīyah li-'Ulūm al-Arḍ 2003

Geomagnetic Observations and Models - M. Mandea 2010-12-10

This volume provides comprehensive and authoritative coverage of all the main areas linked to geomagnetic field observation, from instrumentation to methodology, on ground or near-Earth. Efforts are also focused on a 21st century e-Science approach to open access to all geomagnetic data, but also to the data preservation, data discovery, data rescue, and capacity building. Finally, modeling magnetic fields with different

internal origins, with their variation in space and time, is an attempt to draw together into one place the traditional work in producing models as IGRF or describing the magnetic anomalies.

The Geology in Digital Age - Nenad Banjac 2011-09-12
Abstracts and papers of the 17 MAEGS.

Tectonics of the Deccan Large Igneous Province - S. Mukherjee 2017-03-31
Understanding the Deccan Trap Large Igneous Province in western India is important for deciphering the India–Seychelles rifting mechanism. This book presents 13 studies that address the development of this province from diverse perspectives including field structural geology, geochemistry, analytical modelling, geomorphology and geophysics (e.g., palaeomagnetism, gravity and magnetic anomalies, and seismic imaging). Together, these papers indicate that the tectonics of Deccan is much more complicated than previously thought. Key findings include: the Deccan province can be divided into several blocks; the existence of a rift-induced palaeo-slope; constraints on the eruption period; rift–drift transition mechanisms determined for magma-rich systems; the tectonic role of the Deccan or Réunion plumes; sub-surface structures reported from boreholes; the delineation of the crust–mantle structure; the documentation of sub-surface tectonic boundaries; post-Deccan-Trap basin inversion; deformed dykes around Mumbai, and also from the eastern part of the Deccan Traps, documented in the field.

Geological Interpretation of Aeromagnetic Data - Leigh R. Rankin 2013

Inverse Theory and Applications in Geophysics - Michael S. Zhdanov 2015-07-15
Geophysical Inverse Theory and Applications, Second Edition, brings together fundamental results developed by the Russian mathematical school in regularization theory and combines them with the related

research in geophysical inversion carried out in the West. It presents a detailed exposition of the methods of regularized solution of inverse problems based on the ideas of Tikhonov regularization, and shows the different forms of their applications in both linear and nonlinear methods of geophysical inversion. It's the first book of its kind to treat many kinds of inversion and imaging techniques in a unified mathematical manner. The book is divided in five parts covering the foundations of the inversion theory and its applications to the solution of different geophysical inverse problems, including potential field, electromagnetic, and seismic methods. Unique in its focus on providing a link between the methods used in gravity, electromagnetic, and seismic imaging and inversion, it represents an exhaustive treatise on inversion theory. Written by one of the world's foremost experts, this work is widely recognized as the ultimate researcher's reference on geophysical inverse theory and its practical scientific applications. Presents state-of-the-art geophysical inverse theory developed in modern mathematical terminology—the first to treat many kinds of inversion and imaging techniques in a unified mathematical way. Provides a critical link between the methods used in gravity, electromagnetic, and seismic imaging and inversion, and represents an exhaustive treatise on geophysical inversion theory. Features more than 300 illustrations, figures, charts and graphs to underscore key concepts. Reflects the latest developments in inversion theory and applications and captures the most significant changes in the field over the past decade.

New Frontiers in Tectonic Research - Evgenii Sharkov 2011-07-27

This book is devoted to different aspects of tectonic research. Syntheses of recent and earlier works, combined with new results and interpretations, are presented

in this book for diverse tectonic settings. Most of the chapters include up-to-date material of detailed geological investigations, often combined with geophysical data, which can help understand more clearly the essence of mechanisms of different tectonic processes. Some chapters are dedicated to general problems of tectonics. Another block of chapters is devoted to sedimentary basins and special attention in this book is given to tectonic processes on active plate margins.

Industrial Structural Geology - F.L. Richards 2015-10-22

The practical application of structural geology in industry is varied and diverse; it is relevant at all scales, from plate-wide screening of new exploration areas down to fluid-flow behaviour along individual fractures. From an industry perspective, good structural practice is essential since it feeds into the quantification and recovery of reserves and ultimately underpins commercial investment choices. Many of the fundamental structural principles and techniques used by industry can be traced back to the academic community, and this volume aims to provide insights into how structural theory translates into industry practice. Papers in this publication describe case studies and workflows that demonstrate applied structural geology, covering a spread of topics including trap definition, fault seal, fold-and-thrust belts, fractured reservoirs, fluid flow and geomechanics. Against a background of evolving ideas, new data types and advancing computational tools, the volume highlights the need for structural geologists to constantly re-evaluate the role they play in solving industrial challenges.

How to Write Web Copy and Social Media Content - Paul Lima 2014-08-25

How to Write Web Copy and Social Media Content: Spruce up Your Website Copy, Blog Posts and Social Media Content is more than an online writing book. While writing for online

media is the focus, the book takes writers through the important writing process--showing them how to think before they write. Then it demonstrates how to apply this process to website copy, including structuring copy on websites, blog posts and social media such as Twitter, Facebook and LinkedIn. This book is for those who want to make their website and blog copy sparkle and boost the effectiveness of their social media content. The book is based on business-writing and online and social media copywriting courses that the author teaches for University of Toronto continuing education students and for corporate clients. In short, How to Write Web Copy and Social Media Content will help you organize your thoughts before you write, become a more effective and efficient online writer, make your points in a concise and easy to read/scan manner, achieve your purpose and obtain feedback (if so desired). This book is all about communicating more effectively online so your readers understand why you are writing and what action, if any (remember, a "click" is an action), you need them to take. It is filled with samples, examples and exercises to get you writing for various online media.

Opening and Closure of the Neuquén Basin in the Southern Andes - Diego Kietzmann 2020-01-14

This book provides an overview of newly gathered material focusing on the opening and closure of The Neuquén Basin. The Neuquén Basin contains the most important hydrocarbon reservoirs in Argentina and therefore is characterized by a profound knowledge of the sedimentation mechanisms and closure times. During the last 10 years a considerable amount of new information has been produced that illustrates a complex evolution that involves more than one synrift stage during its evolution, an aborted sag phase associated with the inception of a first foreland basin in late Early Cretaceous times, two

extensional destabilizations in the Late Cretaceous-Paleocene and late Oligocene times and a Neogene magmatic expansion coetaneous to a last mountain building. These processes have produced a polyphasic complex structure that exhumed the rich sedimentary record that characterizes the basin.

Geophysical Inversion - J. Bee Bednar 1992-01-01

This collection of papers on geophysical inversion contains research and survey articles on where the field has been and where it's going, and what is practical and what is not. Topics covered include seismic tomography, migration and inverse scattering.

Continental Basin and Orogenic Processes: Deep Structure, Tectonic Deformation, and Dynamics - Hanlin Chen 2022-11-04

Advances in Modeling and Interpretation in Near Surface Geophysics - Arkoprovo Biswas 2020-01-01

This book deals primarily with the aspects of advances in near surface geophysical data modeling, different interpretation techniques, new ideas and an integrated study to delineate the subsurface structures. It also involves the practical application of different geophysical methods to delineate the subsurface structures associated with mineral, groundwater exploration, subsurface contamination, hot springs, coal fire etc. This book is specifically aimed with the state-of-art information regarding research advances and new developments in these areas of study, coupled to extensive modeling and field investigations obtained from around the world. It is extremely enlightening for the research workers, scientists, faculty members and students, in Applied Geophysics, Near Surface Geophysics, Potential Field, Electrical and Electromagnetic Methods, Mathematical Modeling Techniques in Earth Sciences, as well as Environmental Geophysics.

Encyclopedia of Solid Earth Geophysics - Harsh Gupta

2011-06-29

The past few decades have witnessed the growth of the Earth Sciences in the pursuit of knowledge and understanding of the planet that we live on. This development addresses the challenging endeavor to enrich human lives with the bounties of Nature as well as to preserve the planet for the generations to come. Solid Earth Geophysics aspires to define and quantify the internal structure and processes of the Earth in terms of the principles of physics and forms the intrinsic framework, which other allied disciplines utilize for more specific investigations. The first edition of the Encyclopedia of Solid Earth Geophysics was published in 1989 by Van Nostrand Reinhold publishing company. More than two decades later, this new volume, edited by Prof. Harsh K. Gupta, represents a thoroughly revised and expanded reference work. It brings together more than 200 articles covering established and new concepts of Geophysics across the various sub-disciplines such as Gravity, Geodesy, Geomagnetism, Seismology, Seismics, Deep Earth Processes, Plate Tectonics, Thermal Domains, Computational Methods, etc. in a systematic and consistent format and standard. It is an authoritative and current reference source with extraordinary width of scope. It draws its unique strength from the expert contributions of editors and authors across the globe. It is designed to serve as a valuable and cherished source of information for current and future generations of professionals.

The Utility of Regional Gravity and Magnetic Anomaly Maps - William J. Hinze 1985

The subjects of the papers that make up the volume vary from the preparation of national maps to examples of the many uses of regional maps. The anomalities that are discussed range in areal dimension from hundreds of kilometers to tons of meters. The majority of the papers illustrate the utility of the maps in mapping structures

and lithologic variations wirhin the continenetal crust, the configuration of the crystalline basements rocks, zones of crustal weakness, distribution of extrusive and intrusive igneous rocks and the geometry of sedimentary basins. Most cases are drawn from the United States and Canada, but examples from Europe, Africa, South America and Asia are included.

Geophysics for Mineral Exploration - Michael S Zhdanov 2021-11-04

This Special Issue contains ten papers which focus on emerging geophysical techniques for mineral exploration, novel modeling, and interpretation methods, including joint inversions of multi physics data, and challenging case studies. The papers cover a wide range of mineral deposits, including banded iron formations, epithermal gold-silver-copper-iron-molybdenum deposits, iron-oxide-copper-gold deposits, and prospecting forgroundwater resources.

The Geology of the Egyptian Nubian Shield - Zakaria Hamimi 2020-09-29

This richly illustrated book provides an overview of the Neoproterozoic Pan-African Belt of Egypt (PABE), which represents the northwestern continuation of the Arabian-Nubian Shield (ANS) and the East African Orogen (EAO). The first chapter offers an introduction to the Turin Papyrus Map and the historical background of the PABE, while the second addresses how the PABE is related to the ANS and EAO. Rock succession of the PABE is dealt with in Chapter 3, while Chapter 4 focuses on Sinai Metamorphic Core Complexes and implications on the break-up of Rodinia. Subsequent chapters discuss a broad range of topics, e.g. ophiolite-dominated suprastructural rocks; volcanosedimentary succession, Neoproterozoic volcanism and volcanic rocks in Egypt; enigmatic issues concerning granite, Dokhan and Hammamat sediments; the lithospheric mantle beneath the Northeast African continent and

the mantle section of Neoproterozoic ophiolites from the PABE; sutures, megashears and petrogenetic evolution of the Neoproterozoic rocks of Egypt; and metallic and non-metallic mineral deposits in the PABE, which are covered in extensive detail. The book's closing chapters discuss the application of remote sensing techniques and anisotropy of magnetic susceptibility (AMS) to decipher the tectonic evolution of the PABE, as well as the use of geophysical data to map structural features and hydrothermal alteration zones in the PABE.

DSIM3D - 2015

DSIM3D provides a rapid, unconstrained 3D inversion of gridded magnetic data. It is a Geosoft GX implementation of an inversion approach (Pilkington, 2009) that produces a 3D susceptibility distribution from observed magnetic anomaly data. The GX accepts gridded magnetic data as input and produces a subsurface 3D distribution of magnetic susceptibilities due to an equally spaced array of dipoles. Input parameters include the depth of the model, the distance from the observation plane to the model, the maximum allowable number of iterations, an RMS error limit to terminate iterations, options for grid preconditioning, the initial model susceptibilities, the data noise level, the ambient magnetic field, and the magnetization inclination and declination. The output is a Geosoft voxel model.

The Leading Edge - 2008

The Irish Minerals Industry 1980-1990 - A. A. Bowden 1992

New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater - Mark R. Hudson 2013-01-01

"Extending from Colorado, USA, on the north to the state of Chihuahua, Mexico, on the south, the Rio Grande rift divides the Colorado Plateau on the west from the interior of the North American craton on the east. This volume focuses on the Rio Grande rift's upper crustal basins and is organized geographically with study areas

progressing from north to south. Nineteen chapters cover a variety of topics, including sedimentation history, rift basin geometries and the influence of older structure on rift basin evolution, faulting and strain transfer within and among basins, relations of magmatism to rift tectonism, and basin hydrogeology"--Provided by publisher.

U.S. Geological Survey Bulletin - 1983

Managing Energy Security - Maria G. Burns 2019-03-29

This interdisciplinary book is written for government and industry professionals who need a comprehensive, accessible guide to modern energy security. Introducing the ten predominant energy types, both renewable and non-renewable, the book illustrates the modern energy landscape from a geopolitical, commercial, economic and technological perspective. Energy is presented as the powerhouse of global economic activities. To ensure the uninterrupted supply of energy, nations, industries and consumers need to have options. Efficient energy security planning ensures that when a primary energy source is depleted, compromised or interrupted, an alternative energy source must be readily available. For this reason, the foundations of energy security are built upon the five pillars of Sustainability, Independence, Efficiency, Affordability and Accessibility. The numerous case studies presented in this book demonstrate that energy security may be compromised in the absence of one out of these five ingredients. The book also entertains the Triple-E notion of Energy Efficiency, Environmental integrity and Economies of scale, used by governments and corporations for energy optimization. One of the key strengths of the book is its ability effectively to cover various scientific disciplines, and several energy types, while remaining comprehensible. This book will be of much interest to security or logistics professionals, economists and engineers, as well as

policymakers.

Gravity and Magnetic Exploration - William J. Hinze 2013-03-14

"This combination textbook and reference manual provides a comprehensive account of the principles, practices, and application of gravity and magnetic methods for exploring the subsurface using surface, marine, airborne, and satellite measurements. Key current topics and techniques are described, including high-resolution magnetic investigations, time-variation gravity analysis from surface and satellite gravity measurements, absolute and gradient gravimetry, and the role of GPS in mapping gravity and magnetic fields. The book also describes the physical properties of rocks and other earth materials that are critical to the effective design, implementation and interpretation of surveys, and presents a thorough overview of digital data analysis methods used to process and interpret anomalies for subsurface information. This book is an ideal text for advanced undergraduate and graduate courses, but also serves as a reference for research academics, professional geophysicists, and managers of exploration programs that include gravity and magnetic methods. It is a valuable resource for all those interested in petroleum, engineering, mineral, environmental, geological and archeological exploration of the lithosphere"--

Geoinformatics - A. Krishna Sinha 2006-01-01

"The science of informatics in the broadest sense has been several thousands of years in the making. With the recent emergence of large storage devices and high-speed processing of data, it has become possible to organize vast amounts of data as digital products with ontologic tags and concepts for smart queries. Coupling this computational capability with earth science data defines the emerging field of geoinformatics. Since the science of geology was established several centuries ago, observations led to

conclusions that were integrative in concept and clearly had profound implications for the birth of geology. As disciplinary information about Earth becomes more voluminous, the use of geoinformatics will lead to integrative, science-based discoveries of new knowledge about planetary systems. Twenty one research papers, co-authored by 96 researchers from both earth and computer sciences, provide the first-ever organized presentation of the science of informatics as it relates to geology. Readers will readily recognize the vast intellectual content represented by these papers as they seek to address the core research goals of geoinformatics."--Publisher's website.