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Facies Models: Response to Sea Level Change - Walker,R.G. James,N.P. - 1992

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The Geology of Stratigraphic Sequences - Andrew D. Miall - 2013-06-29
Sequence stratigraphy represents a new paradigm in geology. The principal hypothesis is that stratigraphie successions may be subdivided into discrete sequences bounded by widespread unconformities. There are two parts to this hypothesis. First, it suggests that the driving forces which generate sequences and their bounding unconformities also generate predietable three-dimensional stratigraphies. In re cent years stratigraphie research guided by sequence models has brought about fundamental im provements in our understanding of stratigraphie processes and the controls of basin architecture. Sequence models have provided a powerful framework for mapping and numerieal modeling, enabling the science of stratigraphy to advance with rapid strides. This research has demonstrated the importance of a wide range of processes for the generation of cyclie sequences, including eustasy, tectonics, and orbital forcing of climate change. The main objective of this book is to document the sequence record and to discuss our current state of knowledge about sequence-generating processes.

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A Comprehensive review of modern stratigraphic methods. The stratigraphic record is the major repository of information about the geological history of Earth, a record stretching back for nearly 4 billion years. Stratigraphic studies fill out our planet’s plate-tectonic history with the details of paleogeography, past climates, and the record of evolution, and stratigraphy is at the heart of the effort to find and exploit fossil fuel resources. Modern stratigraphic methods are now able to provide insights into past geological events and processes on time scales with unprecedented accuracy and precision, and have added much to our understanding of global tectonic and climatic processes. It has taken 200 years and a modern revolution to bring all the necessary developments together to create the modern, dynamic science that this book sets out to describe. Stratigraphy now consists of a suite of integrated concepts and methods, several of which have considerable predictive and interpretive power. The new, integrated, dynamic science that Stratigraphy has become is now inseparable from what were its component parts, including sedimentology, chronostratigraphy, and the broader aspects of basin analysis.

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Sequence Stratigraphy on the Northwest European Margin - Norsk petroleumsforening. Conference - 1995
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The quaternary sciences constitute a dynamic, multidisciplinary field of research that has been growing in scientific and societal importance in recent years. This branch of the Earth sciences links ancient prehistory to modern environments. Quaternary terrestrial sediments contain the fossil remains of existing species of flora and fauna, and their immediate predecessors. Quaternary science plays an integral part in such important issues for modern society as groundwater resources and contamination, sea level change, geologic hazards (earthquakes, volcanic eruptions, tsunamis), and soil erosion. With over 360 articles and 2,600 pages, many in full-color, the Encyclopedia of Quaternary Science provides broad ranging, up-to-date articles on all of the major topics in the field. Written by a team of leading experts and under the guidance of an international editorial board, the articles are at a level that allows undergraduate students to understand the material, while providing active researchers with the latest information in the field. Also available online via ScienceDirect (2006) – featuring extensive browsing, searching, and internal cross-referencing between articles in the work, plus dynamic linking to journal articles and abstract databases, making navigation flexible and easy. For more information, pricing options and availability visit www.info.sciencedirect.com. 360 individual articles written by prominent international authorities, encompassing all important aspects of quaternary science Each entry provides comprehensive, in-depth treatment of an overview topic and presented in a functional, clear and uniform layout Reference section provides guidence for further research on the topic Article text supported by full-color photos, drawings, tables, and other visual material Writing level is suited to both the expert and non-expert

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Facies Analysis and Interpretation in Southeastern Nigeria's Inland Basins - Chidozie Izuchukwu Princeton Dim - 2021
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Sediments are the most valuable form of physical evidence for past Earth surface processes. They have the potential to build up an archive of events and provide a window into the past. Through careful examination of sediments the shifting patterns of surface processes across space and time are revealed, allowing us to reconstruct past environments and environmental change. A Practical Guide to the Study of Glacial Sediments is a guide to the standard techniques employed to read the sedimentary record of former glaciers and ice sheets. It demonstrates that the often complex and fragmentary glacial sedimentary record can, when examined systematically and rationally, provide detailed insights into former environments and climates in places where no other evidence is available. The complementary techniques covered in this book include: facies description, grain size analysis, clast form assessment, clast macrofabric analysis, micromorphology, particle lithology and assessment of engineering properties. They yield consistent and meaningful results in a range of glacial depositional environments throughout the world, from the high Arctic to the Himalayas. A Practical Guide to the Study of Glacial Sediments provides students and researchers with a clear and accessible guide to recording and interpreting glacial successions wherever the location.

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providing an analytical review of the ichnology of all major depositional environments and the use of ichnology in sediments the shifting patterns of surface processes across space and time are revealed, allowing us to reconstruct past environments and environmental change. A Practical Guide to the Study of Glacial Sediments is a guide to the standard techniques employed to read the sedimentary record of former glaciers and ice sheets. It demonstrates that the often complex and fragmentary glacial sedimentary record can, when examined systematically and rationally, provide detailed insights into former environments and climates in places where no other evidence is available. The complementary techniques covered in this book include: facies description, grain size analysis, clast form assessment, clast macrofabric analysis, micromorphology, particle lithology and assessment of engineering properties. They yield consistent and meaningful results in a range of glacial depositional environments throughout the world, from the high Arctic to the Himalayas. A Practical Guide to the Study of Glacial Sediments provides students and researchers with a clear and accessible guide to recording and interpreting glacial successions wherever the location.

Sequence Stratigraphy and Facies Associations - Henry W. Posamentier - 2009-04-15
In recent years there has been a virtual explosion of stratigraphic studies utilizing the principles of sequence stratigraphy. Although the concept of time stratigraphy is not new, the packaging of depositional units into systems tracts and sequences is. This new approach has led to the reassessment of areas that in some cases have been the subject of intense geological scrutiny for decades. The fundamental principles upon which sequence stratigraphy is based are applicable at a broad range of temporal and physical scales. This volume arises from several sessions on sequence stratigraphy held at the Thirteenth International Sedimentological Congress, with emphasis on facies associations within a sequence stratigraphic framework.

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Sedimentary Environments is one of the most distinguished and influential textbooks in the earth sciences published in the last 20 years. The first and second editions both won universal praise and became classic works in sedimentology. Since the publication of the last edition, the study of sedimentary environments and facies has made great strides, with major advances in facies modelling, sequence stratigraphy and basin modelling. The 3rd edition of this classic text will likely set the benchmark even higher, and needless to say, will continue being the textbook of choice for sedimentology students. The latest edition of a classic text. Incorporates all the latest advances in dynamic stratigraphy. Will remain the textbook of choice for upper level undergraduate and graduate students in sedimentology.

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Trace Fossils as Indicators of Sedimentary Environments - Dirk Knaust - 2012-12-31
Integration of ichnological information into sedimentological models, and vice versa, is one of the main means by which we can improve our understanding of ancient depositional environments. Mainly intended for sedimentologists, this book aims to make ichnological methods as part of facies interpretation more popular, biostratigraphic and sequence stratigraphic analysis. It starts with an introduction to the historical aspect of ichnology, introducing common concepts and methods, and then continues with parts treating the main depositional systems from continental, shallow-marine and deep-marine siliciclastics, and marine carbonates. The last part is dedicated to the ichnology in hydrocarbon reservoir and aquifer characterization. First overview in 25 years of the status of ichnological studies in facies reconstructions of all major depositional environments Written by a selected, well-experienced and specialized international authorship Provides easy access to the comprehensive and widespread literature

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Glaciogenic Reservoirs and Hydrocarbon Systems - M. Huuse - 2012
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Mass Transport, Gravity Flows, and Bottom Currents: Downslope and Alongslope Processes and Deposits focuses solely on important downslope and alongslope processes. The book provides clear definitions and characteristics based on soil mechanics, fluid mechanics and sediment concentration by volume. It addresses Slides, Slumps, and Debris Flows, Grain Flows, Liquefied/Fluidized Flows, and Turbidity Currents, Density plumes, Hyperpycnal Flows, the Triggering Mechanisms of Downslope Processes, Bottom Currents, and Soft-Sediment Deformation Structures. The mechanics of each process are described in detail and used to provide empirically-driven categories to help recognize these deposits it the rock record. Case studies clearly illustrate of the problems inherent in recognizing these processes in the rock record, and potential solutions are provided alongside future avenues of research. An appendix also provides step-by-step guidance in describing and interpreting sediments. Comprehensively addresses modern downslope and alongslope processes, including definitions and mechanisms Provides key criteria for the recognition of depositional facies in the rock record Includes case studies to illustrate each downslope and alongslope process Identifies key problems and potential solutions for future research Uses pragmatic, empirical, data-driven interpretations to revise conventional facies models

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