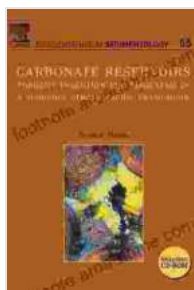


Unveiling the Intricacies of Porosity Evolution and Diagenesis: A Comprehensive Guide

Porosity, the void space within rocks, plays a pivotal role in determining their permeability and reservoir quality. Understanding the evolution of porosity and the diagenetic processes that shape it is crucial for hydrocarbon exploration and production. The book "Porosity Evolution and Diagenesis in Sequence Stratigraphic Framework" (ISSN 55) offers a comprehensive exploration of this topic, providing invaluable insights into the intricate dynamics of porosity formation and alteration.



Carbonate Reservoirs: Porosity, Evolution and Diagenesis in a Sequence Stratigraphic Framework

(ISSN Book 55) by Clyde H. Moore

★★★★★ 5 out of 5

Language : English
File size : 41656 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting: Enabled
Print length : 460 pages



Porosity Evolution: A Dynamic Process

Porosity evolution is not a static phenomenon; it undergoes constant modification throughout the geological history of a rock. Primary porosity, formed during deposition and lithification, can be significantly altered by

subsequent diagenetic processes. The book explores the various factors that influence porosity evolution, including:

- **Compaction:** The weight of overlying sediments can compress rocks, reducing porosity.
- **Cementation:** Minerals can precipitate within pores, further reducing porosity and permeability.
- **Dissolution:** Fluids can dissolve minerals, creating or enhancing porosity.

li>**Fracturing:** Fractures can provide additional porosity and connectivity.

Diagenesis: The Altering Hand

Diagenesis refers to the physical, chemical, and biological changes that occur in sediments after their deposition. These processes can significantly impact porosity and reservoir quality. The book provides a thorough examination of diagenetic processes, including:

- **Compaction:** As sediments undergo compaction, pores are reduced in size and porosity decreases.
- **Cementation:** Minerals, such as calcite or silica, can precipitate within pores, blocking them and reducing porosity.
- **Dissolution:** Fluids can dissolve minerals, enhancing porosity and connectivity.

- **Recrystallization:** Minerals within pores can recrystallize, altering pore size and shape.
- **Replacement:** Minerals can replace existing minerals, changing pore structure and porosity.

Sequence Stratigraphic Framework: A Contextual Framework

The sequence stratigraphic framework provides a chronological framework for understanding the evolution of porosity and diagenesis. The book demonstrates how sequence stratigraphic concepts, such as depositional environments, sequence boundaries, and transgressive-regressive cycles, can help predict the distribution and modification of porosity within a sedimentary succession.

Case Studies and Examples

The book is enriched with numerous case studies and examples, drawn from various sedimentary basins worldwide. These case studies illustrate the application of concepts discussed in the book and provide practical insights into porosity evolution and diagenesis in different geological settings. They cover a wide range of reservoir types, including carbonates, sandstones, and mixed lithologies.

Benefits for Readers

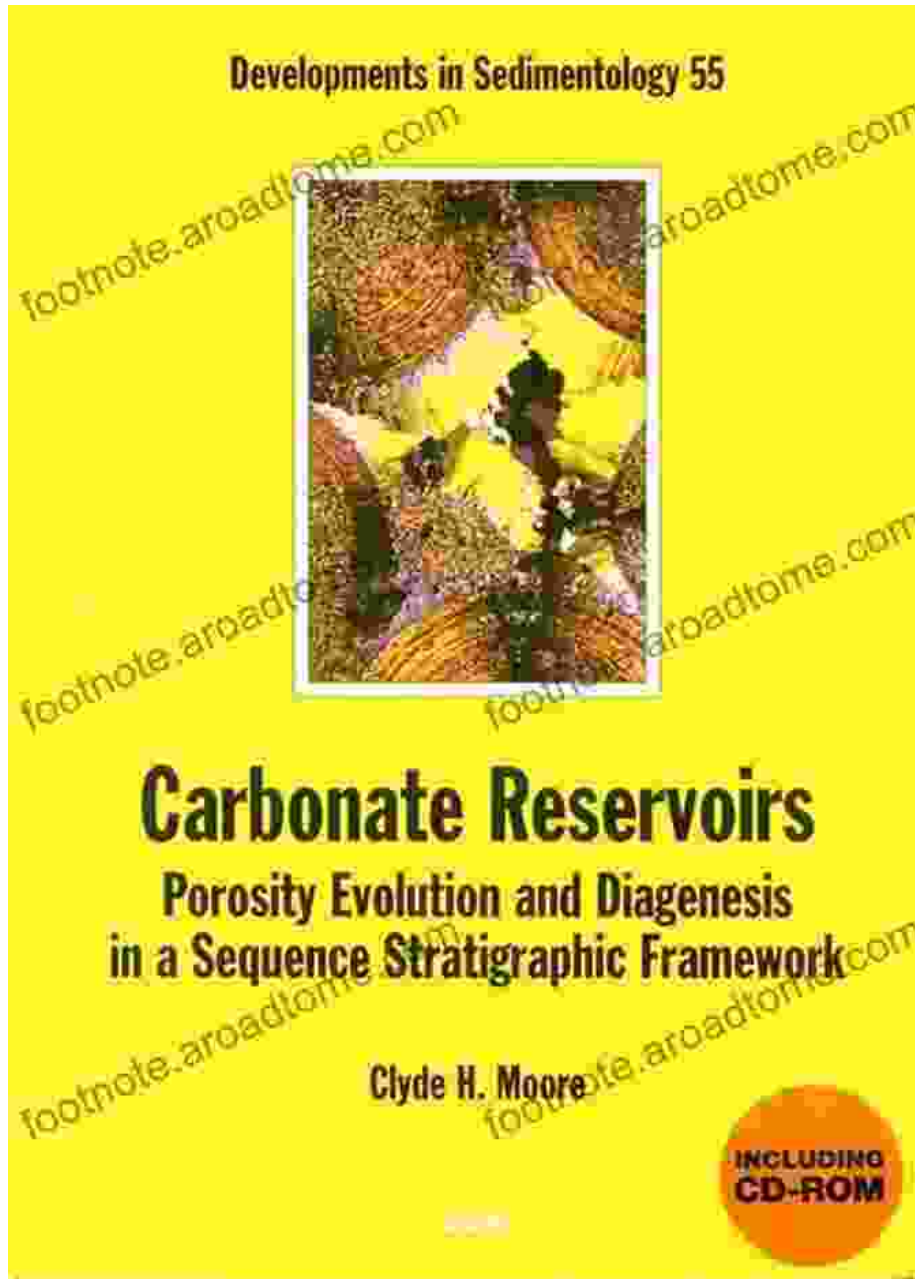
"Porosity Evolution and Diagenesis in Sequence Stratigraphic Framework" offers a wealth of benefits for readers, including:

- A comprehensive understanding of porosity evolution and diagenesis processes.
- Insights into the factors that control porosity modification in different geological settings.
- Practical guidance for predicting porosity distribution and reservoir quality in sedimentary basins.
- Case studies and examples to illustrate the application of concepts and theories.
- A valuable reference for professionals in the fields of petroleum geology, sedimentology, and reservoir characterization.

About the Authors

The book is authored by a team of renowned experts in the field of porosity evolution and diagenesis. Their collective knowledge and experience provide a comprehensive and authoritative perspective on the subject.

"Porosity Evolution and Diagenesis in Sequence Stratigraphic Framework" is an invaluable resource for anyone seeking to understand the intricate dynamics of porosity evolution and diagenesis. Its comprehensive coverage, practical examples, and expert authorship make it an essential guide for professionals in petroleum geology, sedimentology, and reservoir characterization.



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Are you ready to embark on an exciting journey as an entrepreneur in the lucrative supplement industry? Our comprehensive guidebook, "Start Small, Expand, Create Your Own..."



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A Journey of Resilience, Self-Discovery, and Connection In the tapestry of human experience, stories of resilience, self-discovery, and the...