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Titolo	Geological Storage of CO2 in Deep Saline Formations / / edited by Auli Niemi, Jacob Bear, Jacob Bensabat
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2017
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XIX, 554 p. 154 illus., 115 illus. in color.)
Collana	Theory and Applications of Transport in Porous Media, , 0924-6118 ; ; 29
Disciplina	551.4
Soggetti	Hydrogeology Geophysics Geochemistry Environmental monitoring Geophysics/Geodesy Monitoring/Environmental Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	CO2 storage in deep geological formations -- The concept -- Field characterization techniques -- Processes occurring during injection, spreading and storage of CO2 -- Mathematical models -- Laboratory experiments -- Natural analogue studies -- Numerical modeling of CO2 geological storage -- Field sites and field studies -- Performance assessment of CO2 storage sites -- Legislation and regulations.
Sommario/riassunto	This book offers readers a comprehensive overview, and an in-depth understanding, of suitable methods for quantifying and characterizing saline aquifers for the geological storage of CO2. It begins with a general overview of the methodology and the processes that take place when CO2 is injected and stored in deep saline-water-containing formations. It subsequently presents mathematical and numerical models used for predicting the consequences of CO2 injection. This book provides descriptions of relevant experimental methods, from laboratory experiments to field scale site characterization and techniques for monitoring spreading of the injected CO2 within the formation. Experiences from a number of important field injection

projects are reviewed, as are those from CO2 natural analog sites. Lastly, the book presents relevant risk management methods. Geological storage of CO2 is widely considered to be a key technology capable of substantially reducing the amount of CO2 released into the atmosphere, thereby reducing the negative impacts of such releases on the global climate. Around the world, projects are already in full swing, while others are now being initiated and executed to demonstrate the technology. Deep saline formations are the geological formations considered to hold the highest storage potential, due to their abundance worldwide. To date, however, these formations have been relatively poorly characterized, due to their low economic value. Accordingly, the processes involved in injecting and storing CO2 in such formations still need to be better quantified and methods for characterizing, modeling and monitoring this type of CO2 storage in such formations must be rapidly developed and refined.