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Titolo	Kinetics of water-rock interaction [[electronic resource] /] / edited by Susan L. Brantley, James D. Kubicki, Art F. White
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Altri autori (Persone)	BrantleySusan Louise KubickiJames David WhiteArt F
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Analysis of Rates of Geochemical Reactions -- Transition State Theory and Molecular Orbital Calculations Applied to Rates and Reaction Mechanisms in Geochemical Kinetics -- The Mineral-Water Interface -- Kinetics of Sorption—Desorption -- Kinetics of Mineral Dissolution -- Data Fitting Techniques with Applications to Mineral Dissolution Kinetics -- Nucleation, Growth, and Aggregation of Mineral Phases: Mechanisms and Kinetic Controls -- Microbiological Controls on Geochemical Kinetics 1: Fundamentals and Case Study on Microbial Fe (III) Oxide Reduction -- Microbiological Controls on Geochemical Kinetics 2: Case Study on Microbial Oxidation of Metal Sulfide Minerals and Future Prospects -- Quantitative Approaches to Characterizing Natural Chemical Weathering Rates -- Geochemical Kinetics and Transport -- Isotope Geochemistry as a Tool for Deciphering Kinetics of Water-Rock Interaction -- Kinetics of Global Geochemical Cycles.
Sommario/riassunto	Systems at the surface of the Earth are continually responding to energy inputs derived from solar radiation or from the radiogenic heat

in the interior. These energy inputs drive plate movements and erosion, exposing metastable mineral phases at the Earth's surface. In addition, these energy fluxes are harvested and transformed by living organisms. As long as these processes persist, chemical disequilibrium at the Earth's surface will be perpetuated. Chemical disequilibrium is also driven by human activities related to production of food, extraction of water and energy resources, and burial of wastes. To understand how the surface of the Earth will change over time, we must understand the rates at which reactions occur and the chemical feedbacks that relate these reactions across extreme temporal and spatial scales. This book addresses fundamental and applied questions concerning the rates of water-rock interactions driven by tectonic, climatic, and anthropogenic forcings.