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Collana	Advances in trace elements in the environment Transport & fate of chemicals in soils principles & applications.
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Soggetti	Soils - Solute movement - Mathematical models Soil permeability - Mathematical models Inorganic soil pollutants - Transport properties Soil absorption and adsorption
Lingua di pubblicazione	Inglese
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Nota di contenuto	Front Cover; Contents; Preface; The Author; Chapter 1: Sorption Isotherms; Chapter 2: Sorption Kinetics; Chapter 3: Transport; Chapter 4: Effect of Scale; Chapter 5: Multiple-Reaction Approaches; Chapter 6: Second-Order Transport Modeling; Chapter 7: Competitive Sorption and Transport; Chapter 8: Mobile, Immobile, and Multiflow Domain Approaches; Chapter 9: Transport in Nonuniform Media; Back Cover
Sommario/riassunto	This book provides the fundamentals for the understanding of reactive chemicals retention and their transport in soils and aquifers. The book offers the first comprehensive treatment with supporting examples of mathematical models that describe contaminants reactivity and transport in soils and aquifers. It is also a practical guide for designing experiments and collecting data that focuses on characterizing retention as well as release kinetic reactions in soils and contaminant transport experiments in the laboratory, greenhouse (column) and in

the field. --

Over the last four decades tremendous advances have been made toward the understanding of tranport characteristics of the transport contaminants in soils, as well as solutes and tracers in geological media. These advances were broad in nature and addressed physical and chemical processes that influence the behavior of solutes in porous media. Examples include nonlinear kinetics, release and desorption hysteresis, multisite and multireaction reactions, and competitive-type reactions. Examples that focus on physical processes include fractured media, multiregion, multiple porosities, and heterogeneity and effect of scale. This book provides the basic framework of the principals governing the sorption and transport of contaminants in soils. The physical and chemical processes presented above are the focus of this textbook. Details of sorption behavior of chemicals with soil matrix surfaces are presented, as well the integration of sorption characteristics with mechanisms that govern solute transport in soils. Applications of the principals of sorption and transport are not restricted to contaminants. Rather examples include tracers, phosphorus, and trace elements, including essential micronutrients, heavy metals, military explosives, pesticides, and radionuclides--