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Nota di contenuto	Surface Micro-morphology and Adsorption Properties of Sediment -- Basic Characteristics of Bio-sediment -- Biofilm Growth and the Impacts on Hydrodynamics -- Bedload Transport of Bio-sediment -- Suspended Load Transport of Bio-sediment -- Numerical Simulation of Bio-sediment Transport.
Sommario/riassunto	The main focus of this book is the transport mechanics of sediment particles coated with microbial biofilm, which is called bio-sediment. The book also addresses the question of how to measure and simulate the considerable variation in the properties of natural sediment associated with microbial biofilm, ranging from the micro-scale surface morphology to the macro-scale sediment transport. Nowadays most studies to elucidate the mechanisms of sediment transport have concentrated on physical-chemical sediment properties, little work explicitly coupled sediment dynamics and the environmental effects under the influence of micro-ecosystem, thus leaving a serious gap in

water and sediment sciences as well as water ecological research. With respect to physical-chemical sediment properties, this book has been undertaken to evaluate and quantify the effect of biological factors - biofilm on sediment transport mechanics. The chapters cover topics including development of bio-sediment and its properties; model of biofilm growth on sediment substratum; bedform and flow resistance of bio-sediment bed; incipient velocity and settling velocity of bio-sediment; bedload and suspended load transport for bio-sediment; numerical simulation of bio-sediment transport. Besides, the measurement technology, analysis method and expression approach introduced in this book combine the characteristics of hydraulic, environmental and microbial research, having more immediate innovation. This book will be of interest to researchers, managers, practitioners, policy and decision makers, international institutions, governmental and non-governmental organizations, educators, as well as graduate and undergraduate students in the field of hydraulics and river dynamics. It will help to understand the relevance of sediment transport and biofilm growth under the role of aqueous micro-ecosystem, to introduce better tools for the simulation and prediction of bio-sediment transport, and to provide a scientific basis and application foundation for the research of interaction between sediment particles and ecological and environmental factors.

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