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	Titolo	Advances in Monitoring and Modelling Algal Blooms in Freshwater Reservoirs : General Principles and a Case study of Macau / / edited by Inchio Lou, Boping Han, Weiying Zhang
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	Nota di contenuto	Monitoring and Modelling Algal blooms -- Water resources and importance of reservoirs -- Spatio-temporal variations of phytoplankton structure and water quality in the eutrophic freshwater reservoir of Macau -- Using an Online Phycocyanin Fluorescence Probe for Rapid Monitoring of Cyanobacteria in Macau Freshwater Reservoir -- Application of PCR and Real-time PCR for Monitoring Cyanobacteria, Microcystis spp. and Cylindrospermopsis raciborskii in Macau Freshwater Reservoir -- Analysis of Cylindrospermopsin- and Microcystin- Producing Genotypes and Cyanotoxin Concentrations in the Macau Storage Reservoir -- Profiling Phytoplankton Community in Drinking Water Reservoirs using Deep Sequencing -- Integrating Support Vector Regression with Particle Swarm Optimization for Numerical Modeling for Algal Blooms of Freshwater -- Conclusions and outlook.
	Sommario/riassunto	This book describes essential principles of and approaches to monitoring and modeling algal blooms. Freshwater algal blooms have become a growing concern worldwide. They are caused by a high level of cyanobacteria, particularly Microcystis spp. and Cylindrospermopsis raciborskii, which can produce microcystin and cylindrospermopsin,

respectively. Since long-term exposure to these cyanotoxins may affect public health, the reliable detection and quantification of these harmful algae species has become a priority in water quality management. The book utilizes an advanced monitoring approach to identify and quantify cyanobacteria species and various cyanotoxin-producing genotypes. Further, it uses a modeling approach to forecast the occurrence of the phytoplankton that causes algal blooms in freshwater reservoirs, providing a comprehensive picture of currently available micro- and macro-techniques for studying the problem of algal blooms. As such, it offers a valuable guide for researchers, graduate students and professional engineers engaged in monitoring and modeling water quality in lakes and reservoirs.