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Nota di contenuto	Introduction -- Water wave theories -- Numerical Simulation of Long Waves in Shallow Water -- Numerical Simulation of Shallow Water Waves in Coastal Regions -- Numerical Simulation of Wave Run-up and Breaking on Beach -- Numerical Simulation of Wave Forces on Structures -- Numerical Simulation of Pollutant Transport under Waves and Tidal Currents in Coastal Regions -- Numerical Simulation of Coastal Morphological Evolution -- Incompressible Viscous Fluid Model of Water Waves -- Numerical Wave Flume and Numerical Wave Basin -- Applications of Numerical Wave Model in Coastal regions of China.
Sommario/riassunto	This book discusses the numerical simulation of water waves, which combines mathematical theories and modern techniques of numerical simulation to solve the problems associated with waves in coastal,

ocean, and environmental engineering. Bridging the gap between practical mathematics and engineering, the book describes wave mechanics, establishment of mathematical wave models, modern numerical simulation techniques, and applications of numerical models in engineering. It also explores environmental issues related to water waves in coastal regions, such as pollutant and sediment transport, and introduces numerical wave flumes and wave basins. The material is self-contained, with numerous illustrations and tables, and most of the mathematical and engineering concepts are presented or derived in the text. The book is intended for researchers, graduate students and engineers in the fields of hydraulic, coastal, ocean and environmental engineering with a background in fluid mechanics and numerical simulation methods.