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Nota di contenuto	Introduction -- Stationary Flows and Flow Regulations -- Transient Flows and Computational Methods -- Rigid Water Column Theory and Applications -- Surge Tank Functionality and System Stability -- Elastic Water Column Theory and Fundamentals -- Wave Tracking Method -- Method of Characteristics -- Method of Direct Computations and Transient Conformity -- Hydraulic Characteristics of Pumps and Turbines -- Application Examples of Complex Transient Computations.
Sommario/riassunto	This book describes the fundamental phenomena of, and computational methods for, hydraulic transients, such as the self-stabilization effect, restriction of the Joukowsky equation, real relations between the rigid and elastic water column theories, the role of wave propagation speed, mechanism of the attenuation of pressure fluctuations, etc. A new wave tracking method is described in great detail and, supported by the established conservation and traveling laws of shockwaves, offers a number of advantages. The book puts forward a novel method that allows transient flows to be directly

computed at each time node during a transient process, and explains the differences and relations between the rigid and elastic water column theories. To facilitate their use in hydropower applications, the characteristics of pumps and turbines are provided in suitable forms and examples. The book offers a valuable reference guide for engineers and scientists, helping them make transient computations for their own programming, while also contributing to the final standardization of methods for transient computations.