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Nota di contenuto	Foreword -- Preface -- Part I: Cavitation and Cavitation Erosion: Computational and Experimental Approaches -- 1 Cavitation and Cavitation Erosion -- 2 Laboratory Testing Methods of Cavitation Erosion -- 3 Pitting and Incubation Period -- 4 Cavitation Impulsive Pressures -- 5 Mass Loss and Advanced Periods of Erosion -- 6 Modeling of Cavitation Dynamics and Interaction with Material -- 7 Modeling of Material Response -- Part II: Selected Papers from the International Workshop on Advanced Experimental and Numerical Techniques for Cavitation Erosion Prediction (Grenoble, March 1-2, 2011).- 8 Hydrodynamic Processes Controlling Cavitation Erosion.- 9 On the Kinematics of Sheet and Cloud Cavitation and Related Erosion. - 10 Investigations into Dependence Between Cavitation Structures and Cavitation Erosion.- 11 Recent Investigations on Cavitation Erosion at the University of Fukui.- 12 Effect of Nozzle Geometry on Aggressivity

of Cavitating Jet for Cavitation Erosion Test and Applications.- 13 Prediction of Cavitation Erosion and Residual Stress of Material Using Cavitating Flow Simulation with Bubble Flow Model.- 14 Assessment of Erosion Sensitive Areas via Compressible Simulation of Unsteady Cavitating Flows.- 15 Scaling of Cavitation Bubble Cloud Dynamics on Propellers.- 16 Numerical Simulations of Shock Emission by Bubble Collapse near a Rigid Surface -- Index. .

Sommario/riassunto

This book provides a comprehensive treatment of the cavitation erosion phenomenon and state-of-the-art research in the field. It is divided into two parts. Part 1 consists of seven chapters, offering a wide range of computational and experimental approaches to cavitation erosion. It includes a general introduction to cavitation and cavitation erosion, a detailed description of facilities and measurement techniques commonly used in cavitation erosion studies, an extensive presentation of various stages of cavitation damage (including incubation and mass loss), and insights into the contribution of computational methods to the analysis of both fluid and material behavior. The proposed approach is based on a detailed description of impact loads generated by collapsing cavitation bubbles and a physical analysis of the material response to these loads. Part 2 is devoted to a selection of nine papers presented at the International Workshop on Advanced Experimental and Numerical Techniques for Cavitation Erosion (Grenoble, France, 1-2 March 2011), representing the forefront of research on cavitation erosion. Innovative numerical and experimental investigations illustrate the most advanced breakthroughs in cavitation erosion research. .
