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Nota di contenuto	NORMAL MODES AND LOCALIZATION IN NONLINEAR SYSTEMS; CONTENTS; Preface; Acknowledgments; CHAPTER 1 Introduction; 1.1 Concepts of Nonlinear Normal Mode (NNM) and Nonlinear Localization,; 1.2 Example: NNMs of a Two-DOF Dynamical System,; CHAPTER 2 NNMs in Discrete Oscillators: Qualitative Results; 2.1 Preliminary Formulation,; 2.2 Existence Theorem for NNMs,; 2.3 Applications of the Existence Theorem,; 2.4 NNMs in Systems with Concave and Convex Nonlinearities,; CHAPTER 3 NNMs in Discrete Oscillators: Quantitative Results; 3.1 Introduction,; 3.2 Conservative Systems, 3.2.1 Trajectories of NNMs in Configuration Space, 3.2.2 Similar NNMs,; 3.2.3 Nonsimilar NNMs and Matched Asymptotic Expansions,; 3.2.4 Application to a Two-DOF Strongly Nonlinear System,; 3.3 Invariant Manifold Approaches for NNMs,; 3.4 Analysis of NNMs Using Group Theory,; 3.5 Vibro-Impact Systems,; CHAPTER 4 Stability and Bifurcations of NNMs; 4.1 General Stability Results,; 4.2 Similar NNMs,; 4.2.1 Analysis of Stability Boundaries,; 4.2.2 Finite-Zoning Instability Conditions,; 4.3 Nonsimilar NNMs,; 4.4 NNM Bifurcations in a System in Internal Resonance,; 4.5 Stability of Stationary Waves,

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Sommario/riassunto

This landmark book deals with nonlinear normal modes (NNMs) and nonlinear mode localization. Offers an analysis which enables the study of various nonlinear phenomena having no counterpart in linear theory. On a more theoretical level, the concept of NNMs will be shown to provide an excellent framework for understanding a variety of distinctively nonlinear phenomena such as mode bifurcations and standing or traveling solitary waves.
