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Soggetti	Vibration Dynamical systems Dynamics Control engineering Calculus of variations Vibration, Dynamical Systems, Control Control and Systems Theory Calculus of Variations and Optimal Control; Optimization
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I. Analytical Nonlinearity -- Chapter 1. Steady-State Vehicle Dynamics -- Chapter 2. On the Razi Acceleration -- Chapter 3. Challenges in Exact Response of Piecewise Linear Vibration Isolator -- Chapter 4. Active Vibration Control for Nonlinear Axially Translating Cable Systems of Multi-Dimensions -- Chapter 5. Nonlinear Initial Value Ordinary Differential Equations -- Chapter 6. The Loss Tangent of Visco-Elastic Models -- Part II. Practical Nonlinearity -- Chapter 7. Optimization of Hood Design to Minimize Pedestrian Head Injury in Impact -- Chapter 8. Post Buckling Large Diameter Thin Walled Tubes -- Chapter 9. Exhaust System Acoustic Modeling -- Chapter 10. Nonlinear Approaches in Three Dimensional Medical Image Registration

-- Chapter 11. Pose Estimation of a Dioptric Imaging Sensor with a Circle-Projecting Collimated Laser Moving Inside a Pipeline -- Chapter 12. Analysis of Tide Gauge Sea Level Time Series.

Sommario/riassunto

This book focuses on the latest applications of nonlinear approaches in different disciplines of engineering. For each selected topic, detailed concept development, derivations, and relevant knowledge are provided for the convenience of the readers. The topics range from dynamic systems and control to optimal approaches in nonlinear dynamics. The volume includes invited chapters from world class experts in the field. The selected topics are of great interest in the fields of engineering and physics and this book is ideal for engineers and researchers working in a broad range of practical topics and approaches. This book also: · Explores the most up-to-date applications and underlying principles of nonlinear approaches to problems in engineering and physics, including sections on analytic nonlinearity and practical nonlinearity · Enlightens readers to the conceptual significance of nonlinear approaches with examples of applications in scientific and engineering problems from vehicle dynamics to medical image registration · Emphasizes application, physical principles, and methodologies of nonlinear approaches throughout the book.