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Descrizione fisica	1 online resource (266 p.)
Collana	Nonlinear Systems and Complexity, , 2195-9994 ; ; 13
Disciplina	003.75
Soggetti	Computational complexity Vibration Dynamical systems Dynamics Statistical physics Engineering design Automotive engineering Complexity Vibration, Dynamical Systems, Control Applications of Nonlinear Dynamics and Chaos Theory Engineering Design Automotive Engineering
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	1. Introduction -- 2. System Discontinuity and Switchability -- 3. A Theory for Flow Passability -- 4. Dynamical System Interaction -- 5. A Gear Transmission System -- 6. A Freight Train Suspension System -- Appendices.
Sommario/riassunto	This book describes system dynamics with discontinuity caused by system interactions and presents the theory of flow singularity and switchability at the boundary in discontinuous dynamical systems. Based on such a theory, the authors address dynamics and motion mechanism of engineering discontinuous systems due to interaction.

Stability and bifurcations of fixed points in nonlinear discrete dynamical systems are presented, and mapping dynamics are developed for analytical predictions of periodic motions in engineering discontinuous dynamical systems. Ultimately, the book provides an alternative way to discuss the periodic and chaotic behaviors in discontinuous dynamical systems.