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Titolo	Bifurcation in autonomous and nonautonomous differential equations with discontinuities // by Marat Akhmet, Ardak Kashkynbayev
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Descrizione fisica	1 online resource (XI, 166 p. 31 illus., 26 illus. in color.)
Collana	Nonlinear Physical Science, , 1867-8440
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Soggetti	Dynamics Ergodic theory Automatic control Statistical physics Difference equations Functional equations Differential equations Dynamical Systems and Ergodic Theory Control and Systems Theory Applications of Nonlinear Dynamics and Chaos Theory Difference and Functional Equations Ordinary Differential Equations
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Hopf Bifurcation in Impulsive Systems -- Hopf Bifurcation in Filopov Systems -- Nonautonomous Transcritical and Pitchfork Bifurcations in an Impulsive Bernoulli Equations -- Nonautonomous Transcritical and Pitchfork Bifurcations in Scalar Non-solvable Impulsive Differential Equations -- Nonautonomous Transcritical and Pitchfork Bifurcations in Bernoulli Equations with Piecewise Constant Argument of Generalized Type.
Sommario/riassunto	This book is devoted to bifurcation theory for autonomous and nonautonomous differential equations with discontinuities of different types. That is, those with jumps present either in the right-hand-side or in trajectories or in the arguments of solutions of equations. The

results obtained in this book can be applied to various fields such as neural networks, brain dynamics, mechanical systems, weather phenomena, population dynamics, etc. Without any doubt, bifurcation theory should be further developed to different types of differential equations. In this sense, the present book will be a leading one in this field. The reader will benefit from the recent results of the theory and will learn in the very concrete way how to apply this theory to differential equations with various types of discontinuity. Moreover, the reader will learn new ways to analyze nonautonomous bifurcation scenarios in these equations. The book will be of a big interest both for beginners and experts in the field. For the former group of specialists, that is, undergraduate and graduate students, the book will be useful since it provides a strong impression that bifurcation theory can be developed not only for discrete and continuous systems, but those which combine these systems in very different ways. The latter group of specialists will find in this book several powerful instruments developed for the theory of discontinuous dynamical systems with variable moments of impacts, differential equations with piecewise constant arguments of generalized type and Filippov systems. A significant benefit of the present book is expected to be for those who consider bifurcations in systems with impulses since they are presumably nonautonomous systems.
