

1. Record Nr.	UNINA9910558484703321
Autore	Luo Albert C. J.
Titolo	Two-Dimensional Quadratic Nonlinear Systems : Volume II: Bivariate Vector Fields // by Albert C. J. Luo
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2021
ISBN	981-16-7869-3
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (452 pages)
Collana	Nonlinear Physical Science, , 1867-8459
Disciplina	511.3
Soggetti	Dynamics Differential equations Nonlinear theories System theory Dynamical Systems Differential Equations Applied Dynamical Systems Complex Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1 Two-dimensional Linear-bivariate Linear Systems -- Chapter 2 Single-linear-bivariate Quadratic Nonlinear Systems -- Chapter 3 Linear-bivariate Quadratic Dynamics -- Chapter 4 Linear-bivariate Product Quadratic Systems -- Chapter 5 Nonlinear-bivariate Quadratic Systems.
Sommario/riassunto	The book focuses on the nonlinear dynamics based on the vector fields with bivariate quadratic functions. This book is a unique monograph for two-dimensional quadratic nonlinear systems based on bivariate vector fields. Such a book provides different points of view about nonlinear dynamics and bifurcations of the quadratic dynamical systems on linear and nonlinear bivariate manifolds. Possible singular dynamics of the two-dimensional quadratic systems is discussed in detail. The dynamics of equilibriums and one-dimensional flows on bivariate manifolds are presented. Saddle-focus bifurcations are discussed, and switching bifurcations based on infinite-equilibriums are presented. Saddle-focus networks on bivariate manifolds are demonstrated. This

book will serve as a reference book on dynamical systems and control for researchers, students and engineering in mathematics, mechanical and electrical engineering.
