1. Record Nr. UNINA9910897980203321

Autore	Luo Albert C. J.
Titolo	Two-dimensional Product Cubic Systems, Vol. VII : Self- Quadratic Vector Fields / / by Albert C. J. Luo
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-48483-5
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (240 pages)
Disciplina	512.82
Soggetti	Multibody systems Vibration Mechanics, Applied Dynamics Nonlinear theories Stochastic analysis Multibody Systems and Mechanical Vibrations Applied Dynamical Systems Engineering Mechanics Stochastic Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Chapter 1: Self-quadratic and product-cubic Systems -- Chapter 2: Saddle-node singularity and bifurcation dynamics -- Chapter 3: Double-saddles and switching bifurcations.
Sommario/riassunto	This book, the seventh of 15 related monographs, concerns nonlinear dynamics and singularity of cubic dynamical systems possessing a product-cubic vector field and a self-univariate quadratic vector field. The equilibrium singularity and bifurcation dynamics are discussed. The saddle-source (sink) is the appearing bifurcations for saddle and source (sink). The double-saddle equilibriums are the appearing bifurcations of the saddle-source and saddle-sink, and also the appearing bifurcations of the network of saddles, sink and source. The infinite-equilibriums for the switching bifurcations include: • inflection-saddle infinite-equilibriums, • hyperbolic-source (sink)

infinite-equilibriums, • up-down (down-up) saddle infinite-equilibriums, • inflection-source (sink) infinite-equilibriums. Develops a theory of cubic dynamical systems possessing a product-cubic vector field and a self-quadratic vector field; Finds series/networks of equilibriums, 1-dimenional hyperbolic/hyperbolic-secant flows, finite-equilibrium switching; Presents sink and source separated by a connected hyperbolic-secant flow, and the (SO,SI) and (SI,SO)-saddles. .