1. Record Nr. UNINA9910992790903321

Autore	Luo Albert C. J
Titolo	Two-dimensional Crossing and Product Cubic Systems, Vol. II : Crossing-linear and Self-quadratic Product Vector Field / / by Albert C. J. Luo
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	9783031571008 3031571002
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (X, 259 p. 83 illus., 82 illus. in color.)
Disciplina	515.39
Soggetti	Dynamics Nonlinear theories Engineering mathematics Engineering - Data processing Multibody systems Vibration Mechanics, Applied Plasma waves Algebra, Universal Applied Dynamical Systems Mathematical and Computational Engineering Applications Multibody Systems and Mechanical Vibrations Waves, instabilities and nonlinear plasma dynamics General Algebraic Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Quadratic and Cubic Product Systems -- Inflection Singularity and Bifurcation Dynamics -- Saddle-node and hyperbolic-flow singular dynamics.
Sommario/riassunto	This book, the 15th of 15 related monographs on Cubic Dynamic Systems, discusses crossing and product cubic systems with a crossing-linear and self-quadratic product vector field. The author

discusses series of singular equilibriums and hyperbolic-to-hyperbolic-scant flows that are switched through the hyperbolic upper-to-lower saddles and parabola-saddles and circular and hyperbolic upper-to-lower saddles infinite-equilibriums. Series of simple equilibrium and paralleled hyperbolic flows are also discussed, which are switched through inflection-source (sink) and parabola-saddle infinite-equilibriums. Nonlinear dynamics and singularity for such crossing and product cubic systems are presented. In such cubic systems, the appearing bifurcations are: parabola-saddles, hyperbolic-to-hyperbolic-secant flows, third-order saddles (centers) and parabola-saddles (saddle-center). Develops a theory of crossing and product cubic systems with a crossing-linear and self-quadratic product vector field; Presents equilibrium series with hyperbolic-to-hyperbolic-scant flows and with paralleled hyperbolic flows; Shows equilibrium series switching bifurcations by up-down hyperbolic upper-to-lower saddles, parabola-saddles, et al.