

Springer

1st
edition2014, XIII, 289 p. 84 illus.,
1 illus. in color.**Printed book**

Hardcover

Printed book

Hardcover

ISBN 978-3-0348-0656-5

£ 64,99 | CHF 88,50 | 74,99 € |
82,49 € (A) | 80,24 € (D)

Available

Discount group

Standard (0)

Product category

Graduate/advanced undergraduate textbook

SeriesBirkhäuser Advanced Texts Basler
Lehrbücher**Other renditions**

Softcover

ISBN 978-3-0348-0658-9

Mathematics : Ordinary Differential Equations

Llibre, Jaume, Teruel, Antonio E.

Introduction to the Qualitative Theory of Differential Systems

Planar, Symmetric and Continuous Piecewise Linear Systems

- Excellent for learning the use of basic results on qualitative theory of differential systems
- Illustrates how to use the Poincaré map for studying the periodic orbits of a differential system
- Shows the importance of compactification of the domain of definition of a differential system for the understanding of the global dynamics of the system
- Points out the importance of bifurcation diagrams for describing the different dynamics of differential systems depending on parameters

The book deals with continuous piecewise linear differential systems in the plane with three pieces separated by a pair of parallel straight lines. Moreover, these differential systems are symmetric with respect to the origin of coordinates. This class of systems driven by concrete applications is of interest in engineering, in particular in control theory and the design of electric circuits. By studying these particular differential systems we will introduce the basic tools of the qualitative theory of ordinary differential equations, which allow us to describe the global dynamics of these systems including the infinity. The behavior of their solutions, their parametric stability or instability and their bifurcations are described. The book is very appropriate for a first course in the qualitative theory of differential equations or dynamical systems, mainly for engineers, mathematicians, and physicists.

[Order online at springer.com/booksellers](http://springer.com/booksellers)**Springer Nature Customer Service Center GmbH**

Customer Service

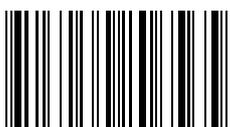
Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

row-booksellers@springernature.com



ISBN 978-3-0348-0656-5 / BIC: PBKJ / SPRINGER NATURE: SCM12147

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**