

Kuznetsov, Yuri A.

Elements of applied bifurcation theory. (English) Zbl 0829.58029

Applied Mathematical Sciences. 112. New York: Springer-Verlag. xv, 515 p. (1995).

This book is written as a textbook on nonlinear dynamical systems, for advanced undergraduate and for graduate students in applied mathematics. It is also very useful for researchers in physics, biology, engineering, and economics.

The book is organized in the following chapters: Introduction to dynamical systems, Topological equivalence, bifurcations, and structural stability of dynamical systems, One-parameter bifurcations of equilibria in continuous-time systems, One-parameter bifurcations of fixed points in discrete-time systems, Bifurcations of equilibria and periodic orbits in n -dimensional systems, Bifurcations of orbits homoclinic and heteroclinic to hyperbolic equilibria, Other one-parameter bifurcations in continuous-time systems, Two-parameter bifurcations of equilibria in continuous-time dynamical systems, Two-parameter bifurcations of fixed points in discrete-time dynamical systems, Numerical analysis of bifurcations. Each chapter contains exercises and references and comments to the literature.

Reviewer: [I.A.Rus \(Cluj-Napoca\)](#)

MSC:

- [37G99](#) Local and nonlocal bifurcation theory for dynamical systems
- [37-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to dynamical systems and ergodic theory

Cited in **3** Reviews
Cited in **366** Documents

Keywords:

[textbook](#); [nonlinear dynamical systems](#); [structural stability](#); [bifurcations](#)