1. Record Nr. UNINA9910829997703321 Autore Gilmore Robert Titolo The topology of chaos: Alice in stretch and squeezeland / / Robert Gilmore and Marc Lefranc Pubbl/distr/stampa Weinheim, Germany:,: WILEY-VCH Verlag GmbH & Co. KGaA,, 2011 ©2011 **ISBN** 3-527-63942-X 3-527-63941-1 3-527-63940-3 Edizione [2nd ed.] Descrizione fisica 1 online resource (1129 p.) Disciplina 003.857 514.74 514/.74 Soggetti Chaotic behavior in systems Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Cover; Half Title page; Related Titles; Title page; Copyright page; Preface to Second Edition; Preface to the First Edition; Chapter 1: Introduction: 1.1 Brief Review of Useful Concepts: 1.2 Laser with Modulated Losses: 1.3 Objectives of a New Analysis Procedure: 1.4 Preview of Results; 1.5 Organization of This Work; Chapter 2: Discrete Dynamical Systems: Maps; 2.1 Introduction; 2.2 Logistic Map: 2.3 Bifurcation Diagrams; 2.4 Elementary Bifurcations in the Logistic Map; 2.5 Map Conjugacy; 2.6 Fully Developed Chaos in the Logistic Map: 2.7 One-Dimensional Symbolic Dynamics 2.8 Shift Dynamical Systems, Markov Partitions, and Entropy2.9 Fingerprints of Periodic Orbits and Orbit Forcing; 2.10 Two-Dimensional Dynamics: Smale's Horseshoe; 2.11 Henon Map; 2.12 Circle Maps; 2.13 Annulus Maps; 2.14 Summary; Chapter 3: Continuous Dynamical Systems: Flows; 3.1 Definition of Dynamical Systems; 3.2 Existence and Uniqueness Theorem: 3.3 Examples of Dynamical Systems; 3.4 Change of Variables; 3.5 Fixed Points; 3.6 Periodic Orbits;

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Sommario/riassunto

A highly valued resource for those who wish to move from the introductory and preliminary understandings and the measurement of chaotic behavior to a more sophisticated and precise understanding of chaotic systems. The authors provide a deep understanding of the structure of strange attractors, how they are classified, and how the information required to identify and classify a strange attractor can be extracted from experimental data. In its first edition, the Topology of Chaos has been a valuable resource for physicist and mathematicians interested in the topological analysis of dynamical