1. Record Nr. UNINA9910254609003321

Titolo	Nonlinear Dynamics: Materials, Theory and Experiments : Selected Lectures, 3rd Dynamics Days South America, Valparaiso 3-7 November 2014 / / edited by Mustapha Tlidi, Marcel. G. Clerc
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-24871-5
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (358 p.)
Collana	Springer Proceedings in Physics, , 1867-4941 ; ; 173
Disciplina	531.11
Soggetti	System theory Lasers Physical chemistry Fluid mechanics Dynamics Nonlinear theories Mathematical physics Complex Systems Laser Physical Chemistry Engineering Fluid Dynamics Applied Dynamical Systems Theoretical, Mathematical and Computational Physics
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	Visualisation of the intensity and phase dynamics of semiconductor lasers via electric field reconstructions -- Coarsening dynamics of umbilical defects in inhomogeneous medium -- Spreading, Nonergodicity, and Selftrapping: a puzzle of interacting disordered lattice waves -- Nonlinear dynamics of Vertical-Cavity Surface-Emitting Lasers: deterministic chaos and random number generation -- Experimental observation of front propagation in Lugiato-Lefever equation in a negative diffractive regime and inhomogeneous Kerr

cavity -- Splitting, hatching and transformation of the repetition rate in a mode locked laser -- Spontaneous Symmetry Breaking in Nonlinear Systems: an Overview and a Simple Model -- Experimental Spatiotemporal Chaotic textures in a Liquid Crystal Light Valve with optical feedback.

Sommario/riassunto

This book presents recent advances, new ideas and novel techniques related to the field of nonlinear dynamics, including localized pattern formation, self-organization and chaos. Various natural systems ranging from nonlinear optics to mechanics, fluids and magnetic are considered. The aim of this book is to gather specialists from these various fields of research to promote cross-fertilization and transfer of knowledge between these active research areas. In particular, nonlinear optics and laser physics constitute an important part in this issue due to the potential applications for all-optical control of light, optical storage, and information processing. Other possible applications include the generation of ultra-short pulses using all-fiber cavities.