1. Record Nr. UNINA9910279757303321

Titolo	Patterns of Dynamics : Berlin, July 2016 / / edited by Pavel Gurevich, Juliette Hell, Björn Sandstede, Arnd Scheel
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-64173-5
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (208 pages) : illustrations (some color), graphs
Collana	Springer Proceedings in Mathematics & Statistics, , 2194-1017 ; ; 205
Disciplina	531.11
Soggetti	Dynamical systems Differential equations Mathematics Dynamical Systems Differential Equations Applications of Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Bernold Fiedler, whose 60th birthday was celebrated at the conference "Patterns of Dynamics," held during July 25-29, 2016 at the Free University of Berlin."
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Part I Patterns and waves -- Michael Herrmann, Karsten Matthies: Uniqueness of solitary waves in the high-energy limit of FPU-type chains -- Jürgen Scheurle: Patterns in Fourier space. - Guido Schneider, Dominik Zimmermann: The Turing instability in case of an additional conservation law – Dynamics near the Eckhaus boundary and open questions -- Anna Zakharova, Nadezhda Semenova, Vadim Anishchenko, Eckehard Schöll: Noise-induced chimera states in a neural network -- Part II Statistical properties of dynamics.– Fredrik Ekström, Jörg Schmeling: A Survey on the Fourier Dimension -- Arnd Scheel, Sergey Tikhomirov: Depinning asymptotics in ergodic media -- Part III Nonlinear partial differential equations -- V. F. Butuzov, N. N. Nefedov, O. E. Omel'chenko, L. Recke, K. R. Schneider: An Implicit Function Theorem and Applications to Nonsmooth Boundary Layers.– Yihong Du, Messoud Efendiev: Existence And Exact Multiplicity For Quasilinear Elliptic Equations In Quarter-Spaces. - Marek Fila, Hiroshi Matano, Eiji Yanagida: Non-uniqueness of solutions of a semilinear

heat equation with singular initial data. - Alexander Mielke: Uniform exponential decay for reaction-diffusion systems with complex-balanced mass-action kinetics -- Peter Polacik: Convergence and quasiconvergence properties of solutions of parabolic equations on the real line: an overview -- Lutz Recke, Martin Väth, Milan Kucera, Josef Navrátil: Crandall-Rabinowitz Type Bifurcation for Non-Differentiable Perturbations of Smooth Mappings -- Matthias Wolfrum: Enumeration of positive meanders -- Part IV Control and numeric -- Wolf-Jürgen Beyn, Denny Otten, Jens Rottmann-Matthes: Freezing Traveling and Rotating Waves in Second Order Evolution Equations -- Klaus Böhmer: Numerical Center Manifold Methods -- Isabelle Schneider: An introduction to the control triple method for partial differential equations -- Part V Applications – Biology and Data Science -- Karthikeyan Rajendran, Assimakis Kattis, Alexander Holiday, Risi Kondor, Ioannis G. Kevrekidis: Data mining when each data point is a network -- Alan D. Rendall: A Calvin bestiary -- Lisa Turnhoff, Nina Kusch, Andreas Schuppert: Big Data and Dynamics – the mathematical toolkit towards Personalized Medicine -- Sjoerd Verduyn Lunel: Using dynamics to analyse time series -- Lai-Sang Young: Unraveling the dynamics of the Brain through modeling and analysis. .

Sommario/riassunto

Theoretical advances in dynamical-systems theory and their applications to pattern-forming processes in the sciences and engineering are discussed in this volume that resulted from the conference Patterns in Dynamics held in honor of Bernold Fiedler, in Berlin, July 25-29, 2016.The contributions build and develop mathematical techniques, and use mathematical approaches for prediction and control of complex systems. The underlying mathematical theories help extract structures from experimental observations and, conversely, shed light on the formation, dynamics, and control of spatio-temporal patterns in applications. Theoretical areas covered include geometric analysis, spatial dynamics, spectral theory, traveling-wave theory, and topological data analysis; also discussed are their applications to chemotaxis, self-organization at interfaces, neuroscience, and transport processes. .