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Titolo	Managing Complexity, Reducing Perplexity : Modeling Biological Systems // edited by Marcello Delitala, Giulia Ajmone Marsan
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Descrizione fisica	1 online resource (140 p.)
Collana	Springer Proceedings in Mathematics & Statistics, , 2194-1009 ; ; 67
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Soggetti	Biomathematics Mathematical and Computational Biology
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Mathematical Ecology of Cancer. T.Hillen and M.A. Lewis -- Quantitative Approaches to Heterogeneity and Growth Variability in Cell Populations. P. Macansantos and V. Quaranta -- A Stochastic Model of Glioblastoma Invasion: the Impact of Phenotypic Switching. P.Gerlee and S.Nelander -- A Hybrid Model for E. Coli Chemotaxis: from Signaling Pathway to Pattern Formation. F.Matthäus -- Multiscale Analysis and Modelling for Cancer Growth and Development. D. Trucu and M.A. J. Chaplain -- A Non-linear Flux-limited Model for the Transport of Morphogens. Glycosylation: a Phenomenon Shared by all Domains of Life. A. Dell and F. Sastre -- Some Thoughts on the Ontogenesis in B-cell Immune Networks. E. Agliari, A. Barra, S. Franz, T.Pentado-Sabetta -- Mathematical Modeling of Cancer Cells Evolution Under Targeted Chemotherapies. M.Delitala and T.Lorenzi -- Traveling Waves Emerging in a Diffusive Moving Filament System. H. Freistühler, J. Fuhrmann and A. Stevens -- Homing to the Niche: a Mathematical Model Describing the Chemotactic Migration of Hematopoietic Stem Cells. M. Neuss-Radu -- DDE Models of the Glucose-insulin System: a Useful Tool for the Artificial Pancreas. J.D. Kong, Sr.S. Kumar, P. Palumbo -- Physics and Complexity: an Introduction. D. Sherrington -- The Language of Systems Biology. M. Delitala and T. Hillen.
Sommario/riassunto	This book is devoted to an overview of the status of the art in the study of complex systems, with particular focus on the analysis of systems

pertaining to living matter. Both senior scientists and young researchers from diverse and prestigious institutions with a deliberately interdisciplinary cut were invited, in order to compare approaches and problems from different disciplines. The common aim of the contributions is to analyze the complexity of living systems by means of new mathematical paradigms that are more adherent to reality and which are able to generate both exploratory and predictive models that are capable of achieving a deeper insight into life science phenomena.

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