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	Titolo	Structured Population Models in Biology and Epidemiology [[electronic resource] /] / edited by Pierre Magal, Shigui Ruan
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2008
	ISBN	3-540-78273-7
	Edizione	[1st ed. 2008.]
	Descrizione fisica	1 online resource (XII, 302 p. 63 illus., 32 illus. in color.)
	Collana	Mathematical Biosciences Subseries, , 2524-6771 ; ; 1936
	Disciplina	577.88015118
	Soggetti	Differential equations
		Partial differential equations
		Biomathematics
		Applied mathematics
		Engineering mathematics
		Ordinary Differential Equations
		Partial Differential Equations
		Mathematical and Computational Biology
		Applications of Mathematics
	Lingua di pubblicazione	Inglese
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	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	Population Models Structured by Age, Size, and Spatial Position -- Infinite ODE Systems Modeling Size-Structured Metapopulations, Macroparasitic Diseases, and Prion Proliferation -- Simple Models for the Transmission of Microparasites Between Host Populations Living on Noncoincident Spatial Domains -- Spatiotemporal Patterns of Disease Spread: Interaction of Physiological Structure, Spatial Movements, Disease Progression and Human Intervention -- Aggregation of Variables and Applications to Population Dynamics -- The Biofilm Model of Freter: A Review.
	Sommario/riassunto	This book consists of six chapters written by leading researchers in mathematical biology. These chapters present recent and important developments in the study of structured population models in biology and epidemiology. Topics include population models structured by age, size, and spatial position; size-structured models for metapopulations,

macroparasitc diseases, and prion proliferation; models for transmission of microparasites between host populations living on non-coincident spatial domains; spatiotemporal patterns of disease spread; method of aggregation of variables in population dynamics; and biofilm models. It is suitable as a textbook for a mathematical biology course or a summer school at the advanced undergraduate and graduate level. It can also serve as a reference book for researchers looking for either interesting and specific problems to work on or useful techniques and discussions of some particular problems.