

1. Record Nr.	UNINA9910781692503321
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Titolo	Adaptive diversification [[electronic resource] /] / Michael Doebeli
Pubbl/distr/stampa	Princeton, N.J., : Princeton University Press, 2011
ISBN	1-283-15248-7 9786613152480 1-4008-3893-2
Edizione	[Course Book]
Descrizione fisica	1 online resource (346 p.)
Collana	Monographs in population biology ; ; 48
Classificazione	SCI088000SCI020000SCI027000
Disciplina	578.4
Soggetti	Adaptation (Biology) - Mathematical models Biodiversity - Mathematical models Evolution (Biology) - Mathematical models
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	Front matter -- Contents -- Acknowledgments -- CHAPTER ONE. Introduction -- CHAPTER TWO. Evolutionary Branching in a Classical Model for Sympatric Speciation -- CHAPTER THREE. Adaptive Diversification Due to Resource Competition in Asexual Models -- CHAPTER FOUR. Adaptive Diversification Due to Resource Competition in Sexual Models -- CHAPTER FIVE. Adaptive Diversification Due to Predator-Prey Interactions -- CHAPTER SIX. Adaptive Diversification Due to Cooperative Interactions -- CHAPTER SEVEN. More Examples: Adaptive Diversification in Dispersal Rates, the Evolution of Anisogamy, and the Evolution of Trophic Preference -- CHAPTER EIGHT. Cultural Evolution: Adaptive Diversification in Language and Religion -- CHAPTER NINE. Adaptive Diversification and Speciation as Pattern Formation in Partial Differential Equation Models -- CHAPTER TEN. Experimental Evolution of Adaptive Diversification in Microbes -- APPENDIX. Basic Concepts in Adaptive Dynamics -- Bibliography -- Index
Sommario/riassunto	"Understanding the mechanisms driving biological diversity remains a central problem in ecology and evolutionary biology. Traditional explanations assume that differences in selection pressures lead to different adaptations in geographically separated locations. This book

takes a different approach and explores adaptive diversification-- diversification rooted in ecological interactions and frequency-dependent selection. In any ecosystem, birth and death rates of individuals are affected by interactions with other individuals. What is an advantageous phenotype therefore depends on the phenotype of other individuals, and it may often be best to be ecologically different from the majority phenotype. Such rare-type advantage is a hallmark of frequency-dependent selection and opens the scope for processes of diversification that require ecological contact rather than geographical isolation. Michael Doebeli investigates adaptive diversification using the mathematical framework of adaptive dynamics. Evolutionary branching is a paradigmatic feature of adaptive dynamics that serves as a basic metaphor for adaptive diversification, and Doebeli explores the scope of evolutionary branching in many different ecological scenarios, including models of coevolution, cooperation, and cultural evolution. He also uses alternative modeling approaches. Stochastic, individual-based models are particularly useful for studying adaptive speciation in sexual populations, and partial differential equation models confirm the pervasiveness of adaptive diversification. Showing that frequency-dependent interactions are an important driver of biological diversity, Adaptive Diversification provides a comprehensive theoretical treatment of adaptive diversification"--

"Adaptive biological diversification occurs when frequency-dependent selection generates advantages for rare phenotypes and induces a split of an ancestral lineage into multiple descendant lineages. Using adaptive dynamics theory, individual-based simulations, and partial differential equation models, this book illustrates that adaptive diversification due to frequency-dependent ecological interaction is a theoretically ubiquitous phenomenon"--

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