

Contents

What Is a Quasispecies? Historical Origins and Current Scope	1
Esteban Domingo and Peter Schuster	
The Nucleation of Semantic Information in Prebiotic Matter	23
Bernd-Olaf Küppers	
Evolution of RNA-Based Networks	43
Peter F. Stadler	
Quasispecies on Fitness Landscapes	61
Peter Schuster	
Mathematical Models of Quasi-Species Theory and Exact Results for the Dynamics	121
David B. Saakian and Chin-Kun Hu	
Theoretical Models of Generalized Quasispecies	141
Nathaniel Wagner, Yoav Atsmon-Raz and Gonen Ashkenasy	
Theories of Lethal Mutagenesis: From Error Catastrophe to Lethal Defection	161
Héctor Tejero, Francisco Montero and Juan Carlos Nuño	
Estimating Fitness of Viral Quasispecies from Next-Generation Sequencing Data	181
David Seifert and Niko Beerenwinkel	
Getting to Know Viral Evolutionary Strategies: Towards the Next Generation of Quasispecies Models	201
Susanna Manrubia and Ester Lázaro	
Cooperative Interaction Within RNA Virus Mutant Spectra	219
Yuta Shirogane, Shumpei Watanabe and Yusuke Yanagi	

Arenavirus Quasispecies and Their Biological Implications	231
Ana Grande-Pérez, Veronica Martin, Hector Moreno and Juan C. de la Torre	
Models of Viral Population Dynamics	277
Pranesh Padmanabhan and Narendra M. Dixit	
Fidelity Variants and RNA Quasispecies	303
Antonio V. Bordería, Kathryn Rozen-Gagnon and Marco Vignuzzi	
Antiviral Strategies Based on Lethal Mutagenesis and Error Threshold.	323
Celia Perales and Esteban Domingo	
Author Index	341
Subject Index	351