

Contents

Preface	v
Acknowledgments	vii
Introduction	1
CHAPTER 1	
Presentation of the Approach and of the Main Results	4
CHAPTER 2	
The Transport of Finite-Dimensional Contact Elements	15
CHAPTER 3	
Spectral Blocking Property	21
CHAPTER 4	
Strong Squeezing Property	25
CHAPTER 5	
Cone Invariance Properties	29
CHAPTER 6	
Consequences Regarding the Global Attractor	33
CHAPTER 7	
Local Exponential Decay Toward Blocked Integral Surfaces	36

CHAPTER 8	
Exponential Decay of Volume Elements and the Dimension of the Global Attractor	38
CHAPTER 9	
Choice of the Initial Manifold	42
CHAPTER 10	
Construction of the Inertial Manifold	47
CHAPTER 11	
Lower Bound for the Exponential Rate of Convergence to the Attractor	52
CHAPTER 12	
Asymptotic Completeness: Preparation	55
CHAPTER 13	
Asymptotic Completeness: Proof of Theorem 12.1	61
CHAPTER 14	
Stability with Respect to Perturbations	68
CHAPTER 15	
Application: The Kuramoto–Sivashinsky Equation	72
CHAPTER 16	
Application: A Nonlocal Burgers Equation	82
CHAPTER 17	
Application: The Cahn–Hilliard Equation	91
CHAPTER 18	
Application: A Parabolic Equation in Two Space Variables	105
CHAPTER 19	
Application: The Chaffee–Infante Reaction–Diffusion Equation	111
References	119
Index	123

