

Index

A

Accessible domain 181
 Algebraic renormalization theory 126

B

Bouncing ball dynamics 146
 Boundary 232

C

Center 19,20,74,75
 Center subspace 19, 69
 Center manifold 70
 Chaotic system 185
 Complete dynamics 170
 Complex eigenvalues 17,97
 Continuous subsystem 177
 Continuous switching 181
 Contraction 18,67
 Contraction map 72

D

Discontinuous dynamical systems 229
 Discrete system 1, 64
 Discrete dynamical systems 63
 Discrete map 64
 Discrete vector field 63

E

Eigenspace 69
 Eigenvalue 3
 Eigenvector 3
 Equi-measuring function 188
 Expansion 18,67

F

Final grazing manifold 264
 Finite domain 182
 Fixed point 2, 65
 Flip oscillation 18,67
 Flip subspace 18,19,67
 Flow 63
 Fractality 139
 Fragmentation 268
 Fragmentized strange attractor 269
 Functional renormalization theory 126

G

G-functions 233-235
 Globale stable manifold 70
 Global unstable manifold 70
 Globally decreasing 195,202
 Globally increasing 195,202
 Globally invariant 195,194
 Generalized Neimark bifurcation 121
 Grazing singular set 257
 Grazing mapping 261-264

H

Henon map 170
 Homogenous linear discrete system 1
 Hyperbolic bifurcation 112
 Hyperbolic fixed point 20, 74

I

Inaccessible domain 181
 Intermittency route to chaos 127
 Initial grazing manifold 255
 Invariance 18, 67
 Invariant subspace 18, 67

- | | | | |
|--|---------------|--|--|
| C^r invariant manifold | 70 | | |
| J | | | |
| Jacobian matrix | 65 | | |
| L | | | |
| Linear discrete system | 1 | | |
| Linear discrete system with distinct eigenvalues | 3 | | |
| Linear discrete system with repeated eigenvalues | 8 | | |
| Linear switching system | 211 | | |
| Linearized system | 66 | | |
| Lipschitz condition | 65 | | |
| Local stable manifold | 70 | | |
| Local unstable manifold | 70 | | |
| Locally decreasing | 190,194 | | |
| Locally increasing | 190,194 | | |
| Locally tangential | 190,194 | | |
| M | | | |
| Manifold | 70 | | |
| Mappings | 206 | | |
| Mapping dynamics | 235 | | |
| Measuring function | 186,188 | | |
| Monotonic, lower saddle | 93 | | |
| Monotonic sink | 92 | | |
| Monotonic source | 92 | | |
| Monotonic, upper saddle | 93 | | |
| Multifractals | 125 | | |
| N | | | |
| Neimark bifurcation | 82,86,121-123 | | |
| Negative dynamics | 160 | | |
| Negative mapping | 161 | | |
| Nonhomogenous linear discrete system | 1,16 | | |
| Nonlinear discrete system | 66 | | |
| Nonuniform discrete dynamical system | 64 | | |
| O | | | |
| Oscillatory, lower saddle | 94 | | |
| Oscillatory sink | 94 | | |
| Oscillatory source | 94 | | |
| Oscillatory, upper saddle | 94 | | |
| P | | | |
| Period-doubling bifurcation | 114,123 | | |
| Period-doubling flow | 185 | | |
| Period-doubling routes to chaos | 130 | | |
| Period-doubling system | 185 | | |
| Periodic flow | 185, 206 | | |
| Pitchfork bifurcation | 115 | | |
| Positive dynamics | 162 | | |
| Positive mapping | 163 | | |
| Post-grazing | 264,267 | | |
| Pre-grazing | 264,267 | | |
| Q | | | |
| Quasiperiodicity routes to chaos | 127 | | |
| Quasiperiodic transition to chaos | 131 | | |
| R | | | |
| Real eigenvalue | 7 | | |
| Renormalization group | 126 | | |
| Repeated switching system | 184 | | |
| S | | | |
| Saddle | 20,74 | | |
| Saddle-node bifurcation | 113,123 | | |
| Semi-active suspension system | 241 | | |
| Similar structure | 134 | | |
| Sink | 20,74,88 | | |
| Source | 20,74,88 | | |
| Spatial derivative | 75 | | |
| Spiral hyperbolic point | 29 | | |
| Spiral saddle | 21,24,30,75 | | |
| Spiral sink | 20,30,75 | | |
| Spiral source | 21,30,75 | | |
| Stable Neimark bifurcation | 82,86 | | |
| Stable node | 20,74,88,90 | | |
| Stable period-doubling bifurcation | 81,84 | | |
| Stable saddle-node bifurcation | 81,84 | | |
| Stable subsapce | 18,67,69 | | |
| Stabilty | 16 | | |
| Stability boundary | 16 | | |
| Subsystems | 177 | | |
| Switching systems | 178 | | |
| T | | | |
| Trajectory | 31,64 | | |
| Transcritical bifurcation | 113 | | |

Index			285
Transport law	181	Unstable saddle-node bifurcation	81,85
		Unstable subspace	18,19,67,69
U			
Uniform discrete dynamical system	64	V	
Uniformly descreasing	192	Vector field	70
Uniformly increasing	191	Vector field switching	222
Uniformly invariant	194	Vibration with piecewise forces	215
Unstable Neimark bifurcation	82,86	Y	
Unstable node	20,74,88,91	Ying-Yang theory	169
Unstable period-doubling bifurcation	82,85,173		



<https://lhscientificpublishing.com/Books/MMMCP-DSDS.aspx>

Discrete and Switching Dynamical Systems

Luo, A.C.J.

2012, 285p.121 illus., Hardcover

ISBN 978-1-62155-002-0