## Contents

## Part I Positive Switched Systems

1	Stability of Discrete-time Switched Positive Linear Systems with Mode-dependent Average Dwell Time Li-Juan Liu, Xudong Zhao and Xi-Ming Sun	3
2	Novel Approaches to Stability and Stabilization of Positive Switched Systems with Unstable Subsystems	11
3	On the Common Linear Copositive Lyapunov Functions for Compartmental Switched Systems Maria Elena Valcher	27
4	Robust Stabilization for Constrained Switched Positive Linear Systems via Output-Feedback Jinjin Liu, Shanen Yu, Zhiqiang Li and Ting Zhang	37
5	Stability Analysis of Discrete-Time Switching Positive System with Delays: Homogeneous Polynomial Copositive Lyapunov Function Method Shuai Li and Duyu Liu	51
6	S-Procedure for Positive Switched Linear Systems and its Equivalence to Lyapunov–Metzler Inequalities Junfeng Zhang and Tarek Raïssi	61
7	Finite Time Interval Observer Design for Discrete-Time Switched Systems Jun Huang, Shanen Yu, Xiang Ma and Liang Chen	73

Par	t II Stochastic Positive Systems	
8	Positivity and Stability of Continuous-Time Stochastic Linear Systems Jinling Liang and Ying Jin	85
9	Asynchronous Control for Positive Discrete-Time Markovian Jump Systems	97
10	Non-fragile Control for Positive Markov Jump Systems with Actuator Saturation	109
11	Travel Behavior Analysis for Free-Floating Bike Sharing Systems Based on Markov-Chain Models	127
12	Positive $L_1$ Controller Design for Positive PiecewiseHomogeneous Markovian Jump SystemsDi Zhang and Qingling Zhang	147
Par	t III Systems with Positivity	
13	Stabilization Design for Uncertain Linear Positive Systems   with Time-Delay   Yujie Zhao, Linling Liao, Xiushan Cai and Yanhong Liu	165
14	Stability Analysis of Discrete-Time Periodic Positive Systems with Delays Tiantong Pu and Qinzhen Huang	179
15	Extension of Lossless Negative Imaginary Lemmas to Systems with Poles at the Origin Junlin Xiong and Yongge Guo	189
16	SDA-RVM Based Approach for Surge Fault Detection and Diagnosis During Aero-Engine Take-Off Process Ji-Bang Li, Shuo Zhang, Xiao-Yu Sun and Wei-Guo Xia	203
17	Closed-Loop Nash Games for Interconnected Positive Nonlinear Systems with $H_{\infty}$ Constraint	215
18	Note on Interval Observer Design Based on Positive System Theory Shenghui Guo, Wenyang Zhang and Jingyun Xu	225

## viii

Contents

19	A New Interval Observer Design Method with Application to Fault Detection Liliang Li, Zhijie Shao, Rui Niu, Gang Liu and Zhenhua Wang	233
Par	t IV Complex Networks	
20	A Left Eigenvector Producing a Smooth Lyapunov Function of ISS Networks	247
21	Pinning Control Design for Stabilization of Boolean Networks From Constructed Boolean Control Networks Rongjian Liu, Jianquan Lu and Jie Zhong	269
22	Improved Multiple-State Observer Design for Boolean Control Networks Junqi Yang, Lizhi Cui, Yantao Chen, Zihan Gao and Wei Qian	279
23	Identifiability of Boolean Networks via Output Data and Initial States	289
24	Oscillation Analysis of Abscisic Acid Signal Transduction Network: A Semi-tensor Product Approach Shuqi Chen, Jiyan Zhang and Yuhu Wu	299
25	A New Energy-Efficient Flooding Broadcast Time Synchronization for Wireless Sensor Networks Tengfei Xia and Shuping He	309
26	Bounded Synchronization for a Class of Coupled Complex Networks with Nonidentical Nodes	321