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5.4 Extension to Directed Graphs5.5 Simulation Examples; 5.5.1 Undirected Graph; 5.5.2 Directed Graphs; 5.6 Conclusion; References; LSNSs with Non-Identical Nodes; 6 Robust Output Synchronization via Internal Model Principle; 6.1 Introduction; 6.2 Problem Statement; 6.3 Consensus of Reference Generators; 6.4 Output Regulation Theory; 6.4.1 Internal Model Principle; 6.4.2 Robust Internal Model Principle; 6.5 Numerical Example; 6.6 Conclusion; References; 7 Output Synchronization via Hierarchical Decomposition; 7.1 Introduction; 7.2 Problem Formulation
8 Synchronization of LSNSs via Static Output Feedback Control8.1 Introduction; 8.2 Problem Formulation and Preliminaries; 8.3 Stability and Control Synthesis; 8.4 Hinfty Performance and Control Synthesis; 8.5 Simulation Example; 8.6 Conclusion; References; 9 Robust Output Regulation via Hinfty Approach; 9.1 Introduction; 9.2 Problem Formulation; 9.3 Identical Reference Generator; 9.4 Robust Regulation via Hinfty Methods; 9.5 Numerical Example; 9.6 Conclusion; References; 10 Adaptive Output Synchronization with Uncertain Leader; 10.1 Introduction; 10.2 Problem Formulation; 10.3 Main Results 10.3.1 Stage 1: Output Synchronization Among Uncertain Leader and Adaptive Reference Generators

Sommario/riassunto

This book provides recent advances in analysis and synthesis of Large-scale network systems (LSNSs) with sampled-data communication and non-identical nodes. In its first chapter of the book presents an introduction to Synchronization of LSNSs and Algebraic Graph Theory as well as an overview of recent developments of LSNSs with sampled data control or output regulation control. The main text of the book is organized into two main parts - Part I: LSNSs with sampled-data communication and Part II: LSNSs with non-identical nodes. This monograph provides up-to-date advances and some recent developments in the analysis and synthesis issues for LSNSs with sampled-data communication and non-identical nodes. It describes the constructions of the adaptive reference generators in the first stage and the robust regulators in the second stage. Examples are presented to show the effectiveness of the proposed design techniques.