

Contents

| | |
|---|-----|
| Hybrid Dynamical Systems, or HDS: The Ultimate Switching Experience | |
| M. S. Branicky | 1 |
| Complexity of Hybrid System Models | |
| J. Guckenheimer | 13 |
| Embedded System Design and Hybrid Systems | |
| A. Sangiovanni-Vincentelli | 17 |
| Hierarchical Hybrid Control Systems | |
| P. E. Caines and Y - J. Wei | 39 |
| The Analysis of Piecewise Linear Dynamical Systems | |
| N. B. O. L. Pettit | 49 |
| Hybrid Controller Design for Multi-Agent Systems | |
| J. Lygeros, D. N. Godbole, and S. Sastry | 59 |
| Logic and Mathematical Programming | |
| S. K. Mitter | 79 |
| The Possibility of Indecision in Intelligent Control | |
| A. R. Teel | 92 |
| A Notion of Discontinuous Feedback | |
| Y. S. Ledyaev and E. D. Sontag | 97 |
| Multimode Regulators for Systems with State and Control Constraints and Disturbance Inputs | |
| I. Kolmanovsky and E. G. Gilbert | 104 |
| Switching Control of Constrained Linear Systems | |
| D. Q. Mayne | 118 |
| Hybrid Control for Global Stabilization of Nonlinear Systems | |
| N. H. McClamroch and I. Kolmanovsky | 128 |
| A Minimum Energy Approach to Switching Control for Mechanical Systems | |
| C. A. Schwartz and E. Maben | 142 |

| | |
|---|-----|
| Lagrangian Modeling and Control of Switch Regulated DC-to-DC Power Converters | |
| R. Ortega and H. Sira-Ramírez | 151 |
| Control of Underactuated Mechanical Systems Using Switching and Saturation | |
| M. W. Spong and L. Praly | 162 |
| Hybrid Systems in Automotive Control Applications | |
| K. Butts, I. Kolmanovsky, N. Sivashankar, and J. Sun | 173 |
| Optimal Hybrid Control with Applications to Automotive Powertrain Systems | |
| L. Y. Wang, A. Beydoun, J. Cook, J. Sun, and I. Kolmanovsky | 190 |
| Optimal Asymptotic Robust Performance Through Logic - Based Switching | |
| J. S. Shamma and K. Poola | 201 |
| Towards a General Complexity-Based Theory of Identification and Adaptive Control | |
| G. Zames | 208 |
| Focusing on the Knowable - Controller Invalidation and Learning | |
| M. G. Safonov | 224 |
| An Approach to Switching Control: Theory and Application | |
| D. E. Miller, M. Chang, and E. J. Davison | 234 |
| On the Performance and Complexity of a Class of Hybrid Controller Switching Policies | |
| S. R. Kulkarni and P. J. Ramadge | 248 |
| Parallel Algorithms for Adaptive Control: Robust Stability | |
| F. M. Pait and F. Kassab Jr. | 262 |