

# CONTROL THEORY AND TECHNOLOGY

## Vol. 14 2016 CONTENTS

### No. 1

#### Special issue dedicated to Daizhan Cheng

Editorial	1	Y. Hong, Z. Xi
A survey on the security of cyber-physical systems	2	G. Wu, J. Sun, J. Chen
Distributed non-cooperative robust MPC based on reduced-order models	11	Y. Long, S. Liu, L. Xie, K. H. Johansson
Consensus of single integrator multi-agent systems with directed topology and communication delays	21	X. Xu, L. Liu, G. Feng
Observer-based leader-following tracking control under both fixed and switching topologies	28	J. Wang, P. Zhang, Z. Liu, X. Hu
Matrix expression and vaccination control for epidemic dynamics over dynamic networks	39	P. Guo, Y. Wang
Output regulation problem for discrete-time linear time-delay systems by output feedback control	49	Y. Yan, J. Huang
New results in global stabilization for stochastic nonlinear systems	57	T. Bian, Z.-P. Jiang
Model reference adaptive impedance control for physical human-robot interaction	68	B. Alqaudi, H. Modares, I. Ranatunga, S. M. Tousif, F. L. Lewis, D. O. Popa
A robust online path planning approach in cluttered environments for micro rotorcraft drones	83	S. Lai, K. Wang, H. Qin, J. Q. Cui, B. M. Chen

### No. 2

Robot impedance control and passivity analysis with inner torque and velocity feedback loops	97	M. Focchi, G. A. Medrano-Cerda, T. Boaventura, M. Frigerio, C. Semini, J. Buchli, D. G. Caldwell
Adaptive control for an uncertain robotic manipulator with input saturations	113	T.-T. Tran, S. S. Ge, W. He
Convergence, stability and robustness analysis of the OFEX controller for high-speed networks	122	J. Liu, O. W. W. Yang
Lyapunov stability and generalized invariance principle for nonconvex differential inclusions	140	S. Liang, X. Zeng, Y. Hong
A necessary and sufficient stabilization condition for discrete time-varying stochastic systems with multiplicative noise	151	R. Gao, X. Liu, H. Zhang
Fault detection for nonlinear discrete-time systems via deterministic learning	159	J. Hu, C. Wang, X. Dong

\* \* \* \*

Erratum	176
---------	-----

### No. 3

## Special issue on disturbance rejection: a snapshot, a necessity, and a beginning

Editorial	177	Z. Gao
Extended state observer for uncertain lower triangular nonlinear systems subject to stochastic disturbance	179	Z. Wu, B. Guo
Sampled-data extended state observer for uncertain nonlinear systems	189	C. Tian, P. Yan, Z. Zhang
On ADRC for non-minimum phase systems: canonical form selection and stability conditions	199	W. Xue, Y. Huang, Z. Gao
Control of systems with sector-bounded nonlinearities: robust stability and command effort minimization by disturbance rejection	209	C. Novara, E. Canuto, D. Carlucci
Robust flat filtering DSP based control of the boost converter	224	H. Sira-Ramírez, A. Hernández-Méndez, J. Linares-Flores, A. Luviano-Juárez
Yet another tutorial of disturbance observer: robust stabilization and recovery of nominal performance	237	H. Shim, G. Park, Y. Joo, J. Back, N. H. Jo
Active disturbance rejection control: between the formulation in time and the understanding in frequency	250	Q. Zheng, Z. Gao

\* \* \* \*

Call for papers	260
-----------------	-----

### No. 4

## Special issue on control of complex systems

Editorial	261	H. Lin, C. Xiang, Q. Ling
Energy-efficient control of nanosatellites during distributed region formation flying	263	R. Haghighi, C. K. Pang
Leader-following consensus for uncertain second-order nonlinear multi-agent systems	279	W. Liu, J. Huang
Optimal decentralized control of large scale systems	287	X. Q. Shi, D. E. Davison, R. Kwong, E. J. Davison
Performance analysis of a distributed power control algorithm for shared and split spectrum femtocell networks	314	K. Senel, M. Akar
Adaptive control of a class of nonlinear time-varying systems with multiple models	323	K. George, K. Subramanian
A novel gain design method to improve the consensus performance of output-feedback multi-agent systems	335	W. Zheng, Q. Ling, H. Lin
Frequency-domain stability criteria for SISO and MIMO nonlinear feedback systems with constant and variable time-delays	347	Y. V. Venkatesh
Conical tank level control using fractional order PID controllers: a simulated and experimental study	369	C. Jáuregui, M. A. Duarte-Mermoud, R. Oróstica, J. C. Travieso-Torres, O. Beytfa

\* \* \* \*

Call for papers	385, 386
Volume contents	I