

Control Theory and Technology

Volume 19 · Number 1 · February 2021

EDITORIAL

A special issue on active disturbance rejection control (ADRC)

Z. Gao · Y. Huang 1

RESEARCH ARTICLES

On transitioning from PID to ADRC in thermal power plants

Z. Wu · Z. Gao · D. Li · Y. Chen · Y. Liu 3

Transfer function analysis and implementation of active disturbance rejection control

G. Herbst 19

A novel ADRC-based design for a kind of flexible aircraft

S. Zhong · Y. Huang · S. Chen · L. Dai 35

A phase-locked loop using ESO-based loop filter for grid-connected converter: performance analysis

B. Guo · S. Bacha · M. Alami · J. Pouget 49

Extended state observer-based pressure control for pneumatic actuator servo systems

J. Mohorcic · L. Dong 64

Data-driven disturbance observer-based control: an active disturbance rejection approach

H. Rojas-Cubides · J. Cortés-Romero · J. Arcos-Legarda 80

Simplifying ADRC design with error-based framework: case study of a DC–DC buck power converter

R. Madonski · K. Łakomy · J. Yang 94

Active disturbance rejection control of nonlinear SISO Lagrangian systems via endogenous injections and exogenous feedback for trajectory tracking

H. Sira-Ramírez · M.A. Aguilar-Orduña ·

B.C. Gómez-León 113

Tuning of active disturbance rejection control for differentially flat systems under an ultimate boundedness analysis: a unified integer-fractional approach

J.E. Otero-Leal · J. Cortés-Romero · E.D. Aguilera ·

F. Galarza-Jimenez · A. Jimenez-Triana 127

On extended state based Kalman filter for nonlinear time-varying uncertain systems with measurement bias

X. Zhang · W. Xue · H.-T. Fang 142

LETTER

Recent advances on distributed online optimization

X. Li 153

Volume 19 · Number 2 · May 2021

RESEARCH ARTICLES

Simplification of Shapley value for cooperative games via minimum carrier

H. Li · S. Wang · A. Liu · M. Xia 157

Dynamic output feedback stabilization of deterministic finite automata via the semi-tensor product of matrices approach

R. Abolpour · M. Raji · P. Moradi 170

Model variables identification of a gas turbine using a subspace approach based on input/output data measurements

H. Bagua · A. Hafaifa · A. Iratni · M. Guemana 183

Security control of positive semi-Markovian jump systems with actuator faults

J. Zhang · H. Yang · S. Zhang · X. Jia 197

An adaptive sliding mode controller design to cope with unmatched uncertainties and disturbance in a MEMS voltage reference source

E. Ranjbar · M. Yaghoubi · A.A. Suratgar 211

Asymptotic stability of port-hamiltonian systems with constant inputs

L. Cai 227

Application of networked discrete event system theory on intelligent transportation systems

J. Liang · C. Gong · Y. Hou · M. Yu · W. Wang 236

Distributed solving Sylvester equations with fractional order dynamics

S. Cheng · S. Liang · Y. Fan 249

Adaptive output consensus for heterogeneous nonlinear multi-agent systems with multi-type input constraints under switching-directed topologies

W. Zhang · Z. Yu · S. Li 260

Consensus control of multi-manipulator systems based on disturbance observer under Markov switching topologies

C.-E. Ren · Q. Fu 273

A neuro-observer-based optimal control for nonaffine nonlinear systems with control input saturations

B. Farzanegan · M. Zamani · A.A. Suratgar ·

M.B. Menhaj 283

LETTER

A survey on distributed iterative learning control for transient formation

D. Meng · Y. Wu 295

RESEARCH ARTICLES

Data-driven optimal switching and control of switched systems

C. Zhang · M. Gan · C. Xue 299

Neural-network-based stochastic linear quadratic optimal tracking control scheme for unknown discrete-time systems using adaptive dynamic programming

X. Chen · F. Wang 315

Optimal LQG control for discrete time-varying system with multiplicative noise and multiple state delays

X. Lu · Q. Zhang · X. Liang · H. Wang · C. Sheng · Z. Zhang 328

Heuristic dynamic programming-based learning control for discrete-time disturbed multi-agent systems

Y. Zhang · C. Mu · Y. Zhang · Y. Feng 339

Extremum seeking-based optimal EGR set-point design for combustion engines in lean-burn mode

H. Shi · Y. Zhang · T. Shen 354

Adaptive Kalman filter for MEMS IMU data fusion using enhanced covariance scaling

F. Mumuni · A. Mumuni 365

A characteristic modeling method of error-free compression for nonlinear systems

B. Meng · Y.-B. Zhao · J.-J. Mu 375

H_∞ output feedback control for large-scale nonlinear systems with time delay in both state and input

Z. Duan · X. Zhang · S. Liu · A. Wei 384

Neural network-based adaptive decentralized learning control for interconnected systems with input constraints

C. Mu · H. Luo · K. Wang · C. Sun 392

Distributed projection subgradient algorithm for two-network zero-sum game with random sleep scheme

H. Xiong · J. Han · X. Nian · S. Li 405

LETTER

Multi-agent coverage control for enhanced geohazard monitoring: a brief review

C. Zhai · Z. Wang · J. Dou 418

EDITORIAL

Special issue on cyber-physical systems and intelligent control in honor of the 65th birthday of Professor Bijoy K. Ghosh

J. Hu · W. Wang 421

RESEARCH ARTICLES

A minimum adequate set of multi-valued logic

D. Cheng · J. Feng · J. Zhao · S. Fu 425

Output digitization of simple measure-preserving linear systems

A. DeStefano · M. Thitsa · C. Martin 430

The dorsolateral pre-frontal cortex bi-polar error-related potential in a locked-in patient implanted with a daily use brain-computer interface

Z. Freudenburg · K. Kohneshin · E. Aarnoutse · M. Vansteensel · M. Branco · S. Leinders ·

M. van den Boom · E.G.M. Pels · N. Ramsey 444

Quantum-enhanced reinforcement learning for control: a preliminary study

Y. Hu · F. Tang · J. Chen · W. Wang 455

Optimal energy consuming planning for a home-based microgrid with mobility constraint of electric vehicles and tractors

S. Inuzuka · T. Shen 465

Support optimal scheduling with weighted random forest for operation resources

L. Li · Q. Yu · H. Shi · Y. Liu 484

A solution strategy for distributed uncertain economic dispatch problems via scenario theory

P. Li · J. Hu 499

Distributed solver for linear matrix inequalities: an optimization perspective

W. Li · W. Deng · X. Zeng · Y. Hong 507

REVIEW

Brain-computer interfaces for human gait restoration

Z. Nenadic 516

RESEARCH ARTICLES

Sequencing of multi-robot behaviors using reinforcement learning

P. Pierpaoli · T.T. Doan · J. Romberg · M. Egerstedt 529

Improving the classification accuracy using biomarkers selected from machine learning methods

L.M. Rodrigo · A.D. Polpitiya 538

REVIEW

Control engineering of continuous-mode single-photon states: a review

G. Zhang 544

RESEARCH ARTICLE

Discrete-time inverse linear quadratic optimal control over finite time-horizon under noisy output measurements

H. Zhang · Y. Li · X. Hu 563

Volume contents I