

# **2025 4th Conference on Fully Actuated System Theory and Applications (FASTA 2025)**

**Nanjing, China  
4-6 July 2025**

**Pages 1-729**



**IEEE Catalog Number: CFP25DM5-POD  
ISBN: 979-8-3315-2693-1**

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP25DM5-POD
ISBN (Print-On-Demand):	979-8-3315-2693-1
ISBN (Online):	979-8-3315-2692-4

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Table of Contents

Fully Actuated System Models for Systems in System Upper Hessenberg Form .....	ZHANG Shiyu, DUAN Guangren	1
Adaptive Fully Actuated Prescribed Performance Control for Combined Spacecraft with Unknown Inertial Parameters .....	DUAN Guangquan, WANG Xiaoguang, LIANG Yuxin, WANG Qi, YU Bowen, MENG Xianglei, DONG Yu	7
Tracking Control for Nonlinear Fully Actuated Systems with Multiple Disturbances Using Dual-Disturbance Observer .....	ZHANG Da-Wei, LIU Guoping	13
Predefined-time Sliding Mode Control for Robotic Arm Based on Fully Actuated System Approaches .....	WANG Qian, SHI Jiahao, LENG Zhaoyang	19
On Fully Actuated Boolean Control Networks .....	LI Zewei, YU Yongyuan	25
A Fully Actuated System Approach Based Attitude Control for 3-DOF Helicopter .....	ZHANG Jing, YANG Jiarui, GAI Wendong, JING Gang	31
Tracking Control of Strict-Feedback System Based on Fully Actuated System Approach .....	NING Wenhui, ZHANG Zhongcai	37
Fully Actuated System Approach to Trajectory Tracking Control of Robot Manipulator with Disturbance .....	ZHAO Huanhuan, GUO Yuchao, FAN Yuan	43
Cooperative Output Feedback Tracking Control of Heterogeneous Multi-Agent Systems under Markovian Switching Topologies and Multiple Measurement Noises .....	WAN Wenjing, LI Zhao-Yan	49
Prescribed-Time Control for a Class of Fully Actuated Rigid-Body Systems .....	ZHU Yingqi, DONG Zhiyuan	55
Prescribed-Time Tracking for Second-order CPSs Against Deception Attacks via Fully Actuated System Approach .....	WANG Yifan, SUN Wei	60
Feature Clustering and Fault-Tolerant Control of Multimodal Missing Data in a Fully Actuated System .....	YE Lishan, MA Shubin, GUO Yifan, ZHAO Liang, YANG Yi	66
The Linear Quadratic Difference Nash Game under D-Step-Delay Information Sharing Pattern .....	XU Wenyu, LIANG Xiao, ZHU Fengzeng, JIN Nana, LIU Jingmei	72
Finite-Time Control of Amphibious Unmanned Surface Vehicles: Fully Actuated System Approach .....	TANG Haoran, MENG Yuhang, XIANG Zhengrong	77
Full-actuated System Approach for an Amphibious Unmanned Surface Vehicle Based on Fixed-time Trajectory Tracking Controller .....	MENG Yuhang, TANG Haoran, WU Dong, XIANG Zhengrong	83
Local Input-to-State Lyapunov Function Based Small-Gain Theorem for Nonlinear Systems .....	WANG Sijia, BAO Adiya, WANG Zhanxiu, SU Xiaoming	88
Fully Actuated System with an Unknown State: A Bearing-only Circumnavigation Case .....	CAO Shida, DUAN Guangren	94
Predictor Design and Delay Robustness Analysis for LTI Systems with State and Input Delays: A Fully Actuated System Approach .....	ZHANG Xujie, DUAN Guangren	100
Designated-time Stabilization of Double-tank Liquid Level System .....	XU Mingxue, SUN Zong-Yao, LI Jiaojiao, MENG Qinghua	106
Fully Actuated System-Based Control for Precise Trajectory Tracking of Quadrotor UAVs .....	UR-REHMAN Aqeel-, CAI Chenxiao	111
Event-Triggered Control for High-Order Fully Actuated Strict-Feedback Nonlinear Systems .....	LIU Zifan, XING Lantao	117

Sampled-data Control of a Class of High-order Fully Actuated Systems ..... LI Min, SHU Feng 123

Adaptive Fuzzy Tracking Control for a Single-Link Flexible Joint Manipulator System Based on the Fully Actuated System Approaches ..... MENG Zhu, BAI Wen, WANG Huanqing 128

A Composite Adaptive Control Approach for a Class of Uncertain Fully Actuated Systems ..... JIA Wushan, XIE Xiaochen, GAO Huijun 134

FMS of Centralized and Distributed Affine Nonlinear Systems and Observer Design Based on FMCF ..... LI Yuyan, ZHANG Jinjin, LIU Shuai 140

A Fully Actuated System Approach to Adaptive Control for Half-Car Active Suspension Systems ..... WANG Tan, KONG He, LI Ping, DUAN Guangren 146

Event-Triggered Prescribed-Time Non-adaptive Control for Uncertain Fully Actuated Nonlinear Systems ..... PAN Wenlong, HUA Changchun, NING Pengju 152

Trajectory Tracking of Robotic Manipulator Based on High-Order Fully Actuated System Approach ..... ZHANG Jinjin, LI Yuyan, LIU Shuai 157

Variable Convergence Rate Control of High-Order Nonlinear Impulsive Systems: A Fully Actuated System Approach ..... LI Yuanen, LI Xuefang, LIU Wanquan 163

ESO-based Iterative Learning Control for Robotic Manipulators with Disturbances: A High-order Fully Actuated Approach ..... CHEN Yanjing, XING Qiqi, WANG Junkai, LI Xuefang 168

Anti-disturbance and Fault Tolerance Control for Discrete Systems Based on Interval Observers ..... LIU QuanZhi, ZHANG Jia-Kun, SUN Li-Song, XIAO Yang, FAN Guowei, ZHANG Liu 174

On the Perfect Output Regulation of High-order Fully Actuated Systems with Zero Dynamics ..... LI Shunli, DUAN Guangren, ZHOU Bin 179

Leader-Following Output Consensus for A Class of Lower-Triangular Multi-Agent Systems with Small Transmission Delays Based on Fully Actuated Approach ..... FENG Shuaigang, LI Yafeng, ZHANG Bo, ZHOU Jiafeng 185

Mean-square Bounded Consensus for Multiple Underwater Biomimetic Vehicle-Manipulators with Packet Losses and Additive Noise ..... MA Hongyu, WANG Wei, HAN Chunyan 191

Prescribed Performance Control for Nonlinear Systems with Input Quantization: A Fully Actuated System Approach ..... LI Zihao, LIU Guopin, ZHANG Yu, WEI Yan-Qiao, HUA Changchun 197

Asynchronous Quantized  $H^\infty$  Filtering of Singular Nonhomogeneous Markov Jump Systems ..... LI Xinrui, HUA Mingang 203

Stabilization and Tracking Control of Underactuated Unmanned Surface Vessel with High-Order Fully Actuated System Approach in GPS-Denied Environments .. PAN Qi, ZENG Tengting, PENG Xiuhui 209

Transformation of Multi-Input Linear Time-Varying Systems into High-Order Fully Actuated Systems ..... DONG Jiacheng, ZHOU Bin, ZHANG Ruiqing 215

Adaptive Control for High-Order Strict-Feedback System Based on Fully Actuated System Approach ..... NING Wenhui, ZHANG Zhongcai 219

固定拓扑下一阶线性多智能体系统周期一致性控制 ..... LV Lingling, LI Gang 224

First-Order Nonaffine SFSs: A FAS Approach Treatment ..... DUAN Guangren, LIU Weizhen 229

Second-Order Nonaffine SFSs: A FAS Approach Treatment ..... DUAN Guang-Ren, WANG Ping 237

Position Control of Artillery Shell Chain Rammer Based on Observer and Fully Actuated System Method ..... DONG Jibin, HOU Baolin, WEI Zhao, XIANG Zhengrong, MENG Yuhang 245

Dynamic Anti-windup Design for Nonlinear High-order Fully Actuated Systems with Actuator Saturation ..... YANG Lin, LI Yuanlong 251

基于有源阻尼的电流源型PWM整流器的控制策略研究  
 ..... CHEN Siyu, ZHAO Zhihong, DONG Liang, XU Yiyang 256

High-Order Fully Actuated Strict-Feedback System-Based Approach for  
 Modeling and Tracking Control of Linear Switched Reluctance Machine  
 ..... MA Yiting, LIU Yiyang, WANG Yucheng, CHEN Shishuo, QIU Li, WU Jun, DENG Feiqi 262

Optimal Control of Nonlinear Singular Systems Based on Fully Actuated System Theory  
 ..... SUN Yufa, FENG Zhiguang 268

Prescribed Performance-Based Anti-windup Design for Nonlinear Fully Actuated Systems with Actuator  
 Saturation ..... YANG Lin, LI Yuanlong 273

Fully Actuated System Approach to Tracking Control of Fixed-Wing Unmanned Aerial Vehicles  
 ..... SHANG Hanjun, GAO Yabin, WANG Jiahui, HOU Qimin, KUANG Jiyuan, LIU Zhuang 278

STTransformer: A Physics-Informed Spatial-Temporal Transformer for Ship Trajectory Prediction  
 ..... LIU Bingzhuo, WU Panlong, LIU Chunhao, HE Shan 284

A Comprehensive Analysis of Electric Vehicle Charging Patterns Using Hybrid BIRCH-K-MEANS Clus-  
 tering Algorithm ..... WANG Zixu, QUAN Hao, MA Xiang, ZHAO Yingxiang, PENG Fuming 290

Design of a PPO-PID Controller Based on Reinforcement Learning  
 ..... ZHOU Lingyun, GUAN Zhe, HUA Changchun, LI Yafeng 297

Robust Identification of Linear Dynamical Systems with Skew-Heavy-Tailed Mixture  
 ..... YU Kaihang, LI Sen, LIU Xinpeng, YANG Xianqiang 303

Sliding Mode Control for Discrete Uncertain T-S Fuzzy Delayed Systems: Attack Detection Scheme  
 ..... ZUO Zhiyuan, LIN Na, ZHANG Hongxu, HAO Liu, HU Jun 309

Quadratic Filtering Based with Random Access Protocol and Probabilistic Quantization  
 ..... ZHOU Yang, LI Na, CHEN Wen, ZOU Lei 315

Finite Time Preassigned Performance Control of Non-strict Feedback Systems with Asymmetric State  
 Constraints ..... YANG Yifan, TANG Wei, LIU Wei, ZHAO Huanyu 321

Output-Feedback-Based Prescribed-Time Adaptive Vehicle Tracking Control  
 ..... MENG Rui, LI Linlin, ZHAO Yifan, TAO Fazhan, WANG Nan 327

Sliding-Mode-Based Active Disturbance Rejection Control for Self-Balancing Transport Vehicle  
 ..... ZHAO Jianchao, LIU Yunlong, LIU Xinyu, LIANG ChaoXin 332

DDPGRU: Enhancing DDPG with a GRU-Based Actor Network for Capturing Temporal Dependencies  
 in State Dynamics ..... ZHOU Yi, GUO Chuanjun, ZHANG Tianhao, LI Zijing, QIU Jianbin 338

Prescribed Performance Control for Attitude Tracking of Spacecraft via  
 High-Order Fully Actuated System Approach and Extended State Observer  
 ..... JIN Dongyan, ZHANG Tianhao, FU Yichuan, QIU Jianbin 343

Model Reduction for Fractional-order Port-Hamiltonian Systems in the Loewner Framework  
 ..... GUAN Zixi, CHEN Rui, ZHANG Jinhua, WEI Yiheng 348

Optimal Control for Networked Systems with Multiple Delays and Packet Losses  
 ..... JIANG Xinyu, LIU Xincheng, ZHAO Xianggang, LIU Jingmei, MA Xiao, LIANG Xiao 354

State Feedback Stabilization for a Class of Nonlinear PDE–ODE Cascade Systems  
 ..... XU Xiang, WU Tao 359

An Advanced Future Point Prediction Approach for Gliding Targets Leveraging Pose Estimation  
 ..... WANG Shoufeng, WU Panlong, ZHAO Yue, WANG Baobao 365

Fixed-Time Adaptive Neural Control for Constrained Stochastic Nonlinear Systems with Unknown Co-  
 variance Noise ..... WEI Zhicheng, MIN Huifang 369

Coordination Optimization of Air-sea Confrontation Force Based on Enhanced MDPLO  
 ..... LI Qihang, HUILI Fan, YU Jian, JUNYU Chen, ZHUO Xingchen, HUANG Qilong, YANG Li 375

Turn-based Sequential Game under Impulsive Control with Perceptual Delay  
 ..... GAO Wanying, WU Jianfa, WEI Chunling 381

Exponential State Estimation of Delayed Fuzzy Quaternion-Valued Inertial Neural Networks  
 ..... GAO Xufeng, ZHANG Ziyue 387

High-Performance Motion Control for Omnidirectional Assistive Wheelchairs Using Robust Fractional-Order Non-Singular Fast Terminal Sliding Mode Control to Enhance Riding Comfort  
 ..... MUBARAK Amar, TIAN Yang, WANG Haoping, ABDALLA Modawy 392

Discrete-time Optimal Disturbance Rejection Control for Buck Converter  
 ..... ZOU Jinfeng, HAN Junjie, WANG Youyi, ZHANG Huanshui 398

Buck Converter Control Based on Optimal Control Algorithm Model Predictive Control  
 ..... HAN Junjie, ZOU Jinfeng, WANG Youyi, ZHANG Huanshui 404

Robot Path Optimization Based on Improved Ant Colony Optimization  
 ..... GUO Xu, XU Anqi, JI Wenlong, LI Siqian, SHANG Yanling, GAO Fangzheng 410

Nonovershooting Tracking Control for Strict-feedback MIMO Nonlinear Systems  
 ..... ZHU Zhijia, LIAO Suyin, JIA Fujin 416

Non-Fragile Set-Membership Filtering Approach for Localization of Automatic Guided Vehicles with Control Input Constraint ..... WANG Zhengzhao, YANG Ning, SONG Yuhang, LV Tianhao 421

Research on Train Localization Method Enhanced by LiDAR and Visual Geometric Constraints  
 ..... FU Licong, CHEN Xin 427

An Tightly-Coupled VIO Algorithm with Backend Pose Graph Optimization for Outdoor Applications  
 ..... JI Wenlong, GUO Xu, XU Anqi, LI Siqian, SHANG Yanling, GAO Fangzheng 433

An Encoding-Decoding-Based State Estimation Scheme Considering Time Delay in Time-Correlated Fading Channels ..... YIN Qiaoyu, WANG Guiru, HAN Chunyan, WANG Wei 439

Predictor Feedback Control of Linear Time-invariant Systems with Distinct Input Delays  
 ..... SHEN Shi-Long, WANG Yu 445

Research on Smooth Wind Power Control Strategy for Hybrid Energy Storage Based on MPC  
 ..... MA PengFei, BU Jing, SUN Boyang 451

A Wheelset Size Measurement System Based on Multi-Line Structured Light  
 ..... LI Qiuyang, ZHANG Yong, SHI Chucheng, JIAN Yihang, WANG Hui 457

Trajectory Tracking of AGV with Control Constraints Based on MPC and Optimal Control Algorithm  
 ..... ZHAO Guosheng, LV Chuanzhi, WANG Hongxia 463

Decentralized Event-Triggered Impulsive Control for a Class of Graph-Interconnected Nonlinear Systems  
 ..... XUE Xiaojuan, DING Zhengtao, ZHANG Dan 469

Numerical Computation for Nabla Fractional Order Systems via Time-frequency Domain Joint Technique  
 ..... ZHANG Jinhua, GUAN Zixi, CHEN Rui, WEI Yiheng 475

Practical Finite-Time Sliding Mode Control of Stochastic Systems via Output Feedback  
 ..... WANG Jiahui, WANG Qingrun, GU Junhua, LIU Zhuang, SHEN Xiaoning, GAO Yabin 481

Hybrid Dynamic Event-Triggered State Observer for Nonlinear Systems Satisfying Incremental Quadratic Constraints ..... SU Tao, SUN Yuan, HUANG Jun, HUANG Keya 487

Finite-Time Interval Observer Design for Four-Mecanum-Wheeled Mobile Vehicle  
 ..... WU Jingyi, HUANG Jun, ZHANG Yueyuan 493

Sliding Mode Control of Three-Phase Voltage Inverter Based on Improved Generalized Proportional Integral Observer ..... LIU Xinyu, ZHAO Jianchao, REN ChengYong, LAI YingXue, LIU Yunlong 499

Controller Synthesis for T-S Fuzzy Systems Based on Premise Variable-dependent $H^\infty$ Performance	HOU Qinghua, ZHAO Xudong	505
An Intelligent Cable Arrangement Detection Algorithm via Improved CNN Architecture and Edge Rectification Technology	ZHANG Mengdie, LIN Yanjun, WANG Junlei, RUAN LinJie	511
Optimal Quantized Feedback Control for the Linear-Quadratic-Gaussian System with Input Delay	JIANG Xinyu, LIU Xincheng, TAN Boqun, ZHAO Xianggang, CHEN Huiling, LIANG Xiao	517
Observer-based Prescribed Finite-time Control for Singularly Perturbed Systems	LI Zheng, CAI Chenxiao	523
Research on Multi-Constraint Cooperative Guidance Law Based on Sliding Mode Control	CHEN Zhaoyuan, HAO Mingrui, YUE Keyuan	529
Model Free Extended State Observer Based Sliding Mode Prescribed Time Control for Series Elastic Actuator-Based Manipulator	DAI Huilin, WANG Haoping, TIAN Yang, ZHANG Liuchang	534
Safe Tracking Control of an Underactuated Suspended Backpack via BLF-Based Backstepping and a Disturbance Observer	YUAN Yuanyuan, CAO Yu, GUO Yifei, HUANG Jian	540
Friiled Lizard Optimization Based Fuzzy PD Control for Lower Limb Exoskeleton Rehabilitation Robots	FAN Xiaoxuan, CHEN Ming, YANG Xicheng, WANG Zheming, CHENG Ruidong, CHEN Bo	546
Fixed-Time Fuzzy Sliding Mode Control of Nonlinear Systems with Stochastic Processes	LI Yao, WANG Jiahui, GAO Yabin, ZENG Yi, SHEN Xiaoning, LIU Jianxing	552
Weighted Multi-Game Approach to Multi-QUAV Formation Control	CAI Fangyu, HUANG Yiqing, HUANG Heming	558
Lead-Time Affine Formation Control of Multi-agent Systems under Actuator Faults	PI Jiawei, TAN Chong, LI Yanjiang	564
Prescribed-Time Active Fault-Tolerant Control for Bipartite Average Tracking of Multiagent Systems with Matrix-Weighted Signed Network	ZHAO Xiaofeng, LV Yunkai, WANG Zhuping, ZHANG Hao	570
Predefned-Time Adaptive Sliding Mode Control for Multi-Agent Systems	XUN Shida, GUAN Jiayou, LIU Zuojun, ZHANG Wei, JI Wenqiang, QU Qifu	576
Distributed $H_{\infty}$ Sliding Mode Functional Filtering for a Class of Nonlinear Systems	SHI Xiaotian, CAI Chenxiao	581
Attack-Resilient Control of False Data Injection Attacks Based on Virtual Layer Network	JIANG Qiuzhen, XIAOYU Wu	587
Adaptive Bearing-based Target Entrapping Control of Autonomous Underwater Vehicles Using Fully Actuated System Approach	SU Haifan, YANG Ziwen, ZHU Shanying, CHEN Cailian	593
Distributed Secondary Voltage Control Considering Reactive Power Constraints	ZHU Dandan, ZHOU Qian, XU Xian, JIA Yongyong	599
Distributed Secondary Frequency Control of Islanded Microgrid Considering Power Constraints	ZHU Jie, ZHANG Yuping, XIE Yunyun, CAI Sheng, LIU Jiahua, SHI Huizhong	605
带未知有界测量误差的多智能体动态最大一致性	YUAN Yufei, TAO Yuyao, SONG Cheng	611
带未知有界扰动和速度约束的二阶多智能体环形编队控制	TAO Yuyao, YUAN Yufei, SONG Cheng	617
边界区域上带位置和速度约束的多智能体编队控制	HE Yongqin, SONG Cheng	623
Fixed-time Consensus Control Strategy for a Class of Nonlinear MAS	BAI Ziqi, QI Wenhai	629
Multi-Agents Formation Obstacle Avoidance Control Based on Improved Artificial Potential Functions	WANG Jian, ZHOU Jun	635
One-Step Ahead Optimal Strategy for Opinion Dynamic Games Among Competitive Groups	CAI Guoqing, LIU Qingsong	641

Coupled Sliding Mode Control of Autonomous Vehicle Platoons Based on Disturbance Observer and Modified Multi-Power Reaching Law ..... SUN Kangxin, XU Qiyi, WANG Zhihua 647

Event-Triggered Fault-Tolerant Control and Synchronous Disturbance Suppression for Multi-Agent Systems with Switching Topologies .. REN Dongxin, PANG Guochen, CHEN Xiangyong, MU Xiaojian, QIU Jianlong, CAO Jinde 653

Adaptive Full Actuation Control for Autonomous Vehicle Platoons ..... REN Tianqun, YAN Fei, GU Guoxiang 659

Energy-efficient Path Planning of Data Collection in Multi-UAV-assisted WSN ..... GUO Jing, WEI Binting, QIU Feihang, ZHANG Xu 663

Finite-time Formation Control for Fixed-Wing UAVs Based on Fully Actuated System Approach ..... LI Zhengyuan, CHEN Chen, GUO Jian 668

Optimal Consensus for High-order Nonlinear Multi-agent Systems Based on Event-triggered PI Regulation ..... ZHU Junru, WU Wenqiang, WANG Qingling 674

GNN-based Distributed Consensus Control for Heterogeneous Multi-Agent Systems with Linear and Fully Actuated Nonlinear Model ..... WANG ZhiYu, LIN Zhiyun 680

MLP-based Fixed-time Neural Network Formation Control for Uncertain Multi-USVs with Nonsymmetric Dead Zone ..... CAI Wei, HE Chang, TANG Siyu, ZHOU Xingyu 686

Distributed Sequential Balance Control for Modular Multilevel Converter-Based Battery Energy Storage System ..... ZHAO Zhichao, WANG Licheng, AHMED Zahoor, ZHANG Yong 692

Dual-Mode UAV Collaboration in Unknown Environments: A Frontier-Integrated MASAC Approach with Dynamic Role Specialization ..... HE Chanjuan, WANG Guanqi, CAI Chenxiao 700

Homology Analysis for Positioning Offsets Caused by Malicious Attacks ..... LI Xiaolei, CHEN Xuzheng, CHE Wan Li, SHI Yukun, WANG Youqing 706

Prescribed-time Affine Formation Control for Nonholonomic Constrained Robots ..... TANG JiYe, LI Jianzhen, ZHOU Junyi, LIU Guicai, QIAO Ning 712

Safe Reinforcement Learning with Constraints: A Survey ..... CHEN Zhengyu, LI Hongru, YANG Xuefei, GONG Xin 718

Consensus for Second-Order Integrator Agents with Switching Topologies and Delays ..... LI Chang-jiang, DU Zhaoping, LI Jianzhen, YE Shuxia, SUN Xueying, XU HengJie, FU Qi 724

Obstacle Avoidance Formation Strategy for Unmanned Vehicles via Improved Grey Wolf Optimizer and Artificial Potential Field Method ..... ZHANG Haoyi, ZHANG Huiyan, HE Wenting, CHEN Xiaoli 730

Fixed-Time Projective Synchronization of Multi-layer Neural Networks in the Presence of Denial-of-Service Attacks ..... TAIFENG Zhan, MA Kun, ZHANG Yijun 735

SNR-Adaptive Weighted Metropolis Consensus Filtering Algorithm for Distributed Target Tracking ..... KONG Lingqi, WU Panlong, LI Xingxiu, HE Shan, XIAN Wen Wen, CUI Xiaolong 741

A Fast Power Sharing Method for Wind Farms Participating in Primary Frequency Regulation ..... GE Zemiao, SUN Ze, CHEN Zaiyu 747

Adaptive Variable-Period Event-Triggered Control for High-Order Fully Actuated Nonlinear Multi-Agent Systems ..... CUI Hailong, ZHAO Guanglei, DING Weili 752

Distributed Optical Frequency Domain Measurement System Based on Common Single-mode Optical Fiber ..... TIAN Lulu, YAN Xiaoxuan 758

Containment Control of Linear Heterogeneous Multi-agent Systems with Time Delay ..... CHEN ShuQi, BAO Adiya, WANG Zhanxiu, SU Xiaoming 763

Sample-data Output Consensus for Heterogeneous Linear Multi-agent Systems with Time-varying Communication Delays ..... GUO Haopeng, WU Tao, XU Xiang 769

Approximate Optimal Control for Nonlinear Multi-Agent Cooperative Pursuit-Evasion Games Using Single-Network ADP .....	ZHANG Zhongyu, QI Guoqing, LI Yinya, SHENG Andong	775
The Intelligent Decision-Making and Planning of Multi-Satellite Game under A Single Fault .....	LIU ShengYang, HAN Fei, FENG Haolong, SONG Ting	781
Multi-agent Cooperative Pursuit Algorithm for UGVs Based on MASAC ....	FANG Min, WANG Jun	787
Distribute Nash Equilibrium Seeking for Networked Agent Games with Time-varying Communication Constraints .....	ZENG Fanyong, XIAO Shasha, YU Tingting, WANG Xin	793
Distributed Interval Observer Design over Directed Switching Topologies .....	CAO Ning, WANG Xiaoling	799
On Distributed Observer Design of a Descriptor System .....	LI Feixiong, WANG Xiaoling	805
A Fixed-Time Distributed Optimization Algorithm Based on Dynamic Event-Triggered Strategy .....	XU Yu, WANG Yong, QIAN Lihui, SU Housheng	811
Distributed Optimization of High-Order Multi-Agents Based on Activatable Event-Triggering Mechanisms .....	QIAN Lihui, WANG Yong, XU Yu, SU Housheng	817
带有测量误差和输入饱和约束的多智能体系统统一一致性 .....	MA Quchao, SONG Cheng	823
A Study of Multi-UAV Cooperative Pursuit Based on PointNet-MATD3 .....	DING Yijing, QI Guoqing, LI Yinya, SHENG Andong	829
Event-Triggered Cooperative Output Regulation for MASs with Prescribed Time Constraints .....	HOU Qinghua, ZHAO Xudong	835
Adaptive Event-Triggered Consensus for Unknown Nonlinear Multi-agent Systems with Limited Bandwidth .....	QUAN Ying, WANG Haoping, TIAN Yang	840
Optimal Control Strategies in Multi-Pursuit-Multi-Evasion Differential Games with Communication Graphs .....	CHEN Lin, QI Guoqing, LI Yinya, SHENG Andong	846
Distributed Self-Triggered Formation Control for Fixed-Wing UAVs with Velocity and Overload Limits .....	WEI Mingyang, WEI Yuheng, CHEN Jiayi, CHEN Yong, GUO Wei, ZHENGHONG Jin, WANG Zhanxiu	852
A Task Allocation Algorithm of Spacecraft Cluster Space Game .....	FENG Haolong, HAN Fei, LIU ShengYang, NING Lei, SONG Ting	858
Fixed-Time Quadrotors Formation Control via Dynamic Surface Control with Disturbance Observer and Neural Networks .....	AO Dun, ZHANG Xin, XIAO Yao	863
Hybrid Dynamic Event-triggered Fixed-time Circumnavigation Control for Multiagent Systems .....	LI Yinya, WANG Xin, QI Guoqing, ZHU Baoxing	869
Fixed-Time Distributed Average-tracking of Second-order Multiagent Systems via Event-triggered Control .....	YU Yuanjun, HUANG Xin, LIU Cheng-Lin	876
Stability Analysis of T-S Fuzzy Systems by Using Integral-type Event-trigger Scheme .....	GUO Zichen, FAN Yingjie, ZHEN Wang	882
Fixed Time Disturbance Observer Based Adaptive Fuzzy Control for QUAV with State Constraints .....	CHEN Runze, MA Qian	887
Fully-actuated System Approaches Based Fault-tolerant Attitude Control via Intermediate Variable Estimator .....	SHIYU Han, DUAN Guangren	893
Resilient Estimation for Linear and Adaptive Distributed Observer Based on Redundant Information Flow .....	MO Jingjian, ZHANG Xiaobo, ZHANG Yangkun, LU Wenjie, LI Peng	899
Fault Detection for Markov Jump Systems Against Deception Attacks under Critical-Information Protection Mechanism .....	MA Siteng, CHEN Weilu, YANG Xiaolong, WU Zhihui, HU Jun	905

Fault Diagnosis for Gearbox of Wind Turbine Based on Transfer Learning and Improved Res2Net .....	CHEN Ke, GAO Ming, SHENG Li, XI Xiaopeng	911
Incremental Fully Actuated System Approach Based Fault-Tolerant Control Design and Fight Implementation of Unmanned Helicopters .....	LIU Guangrun, MIAO Qiyang, XIA Jingping, JIANG Bin, ZHANG Ke	917
Re-planning of Reconnaissance Missions for Multi-UAV Systems under Potential Faults .....	XU Lintao, ZHANG Ke, JIANG Bin	923
High-Gain Observer-Based Fault-Tolerant Stabilisation for High-Order Sub-Fully Actuated Systems .....	GONG Mengtong, SHENG Li, ZHOU Donghua	929
Fault-Avoidant Control for Stochastic Fully Actuated Systems with Local Faults .....	LIU Xueqing, SHENG Li, ZHOU Donghua	935
Event-triggered Adaptive Robust Fault-tolerant Control for Interconnected Systems with Flexible Prescribed Performance .....	YANG Jingbo, HU Shenglin, LIU Zhitai, LI Zhan, SUN Weichao	941
The Strategy of Master Controller Automatically Downloading Three Slave Controller Software .....	GAO Yang, DAI Zhengxing, ZENG Ruiyue, GONG Huanhuan, LIU Ribiao, WANG Ruiguang, LIU Jiangfeng, LIU Yiqiang	947
Fault-Tolerant Control for High-Order Fully Actuated Systems with Dead-Zone Observers .....	CAI Miao, ZHOU Donghua	953
Sliding Mode Control-based Prescribed Performance Fault-Tolerant Tracking Control for Morphing Aircraft .....	YE Ziqi, XU Hui, FAN Xuen, DAI Encheng, CAI Guang-Bin	959
Fault-Tolerant $H^\infty$ Control for a Linear Parameter-Varying Model of Morphing Aircraft .....	FAN Xuen, WU Tong, CAI Guang-Bin	965
Fault Diagnosis of Lithium Battery Packs Based on Hybrid Attention-Enhanced CNN-GRU Model .....	WANG Lingzhi, CHEN ZeYang, PAN Tinglong, YANG Weilin, XU Dezhi, JIANG Dongnian	971
Sensor Fault Diagnosis for Satellite Attitude Control System Based on WPE and OOA-BP Neural Network .....	YUAN Xin, FU Fangzhou, YU Muye, QIAN Zhen	977
Robust Fault-Tolerant Attitude Control for Hypersonic Vehicles Based on Fast Terminal Sliding Mode .....	LI Cheng, ZHOU Chuan, GUO Jian, WU Yifei, JIA Zhiqiang	984
Fault-Tolerant Formation Control for Stochastic Multi-agent Systems with Noise and Channel Interference .....	LIU Anning, SHI Jiantao	990
Digital Twin-Based Monitoring and Networked Tolerant Control for Cyber-Physical Systems .....	SHIYU Chen, LIU Guoping, YU Yi	996
Fault Diagnosis of Motors via Multivariable Time Sequenc Features Fusion of Electrical Signals .....	TAN Xingguan, LIU Guoping	1001
Fault-Tolerant Strategy for Excitation Windings in Hybrid Axial Field Flux-Switching Motor Based on Multi-Vector Model Predictive Current Control .....	PENG Xiangqian	1007
Fault Detection Set-Valued Observer Design for Discrete-Time Nonlinear Systems Based on Fully Actuated System Approach .....	REN Weijie, KONG He, DUAN Guangren	1015
Multi-Objective Optimal Design and Fault-Tolerant Control of a Five-Phase Permanent Magnet Motor .....	XU Jing, JIANG Xuefeng, ZHOU Wangyang, LUO Huixin, ZHAO Zhao	1020
Position Identification of PMSM Based on Second-Order Generalized Integrator under Hall Sensors Fault .....	SONG Yuanjun, YAN Jianhu, DUAN Zhiyong, ZHANG Long	1026
High-performance IPMSM Servo Drive Using STSM Speed Control and Iterative MTPA Current Control .....	LI Hang, LI Wenlong	1032

Decoupled Estimation of Resistance and Permanent Magnet Temperature of Permanent Magnet Synchronous Motor Based on Current Angle Injection .....	SHI Chengtao, LU Yuting, DING Beichen, FENG Guodong	1038
Pantograph-Catenary Marginal Index Method Using ICEEMDAN-SPWVD for Railway Hard Spot Diagnosis	MING Ga, LIU Yingshun, XU Zhongxuan, CHEN JiangLong, JIANG Huichuan, FU Yunxiao	1043
Robust Estimation of FDI Attacks in Cyber-Physical Systems: A Composite Hierarchical Approach .....	DONG Lewei, ZHANG Dan, LI Zhengcai, CHEN Yuqing, ZHAI Xiaokai	1051
AHP-entropy Weight Based Railway Passenger Station Operation Safety Assessment Model .....	XU Peiyu, WU Yikai, LEI Aiguo	1057
Vector Space Decoupling and Negative-Sequence Component-Based Fault-Tolerant MPC for DTP-PMSMS .....	LIU Haoran, LI Wenlong, ZHU Jingheng	1063
Research on Fault Diagnosis Method Based on Probe Coil for Inter-Turn Short Circuit and Rotor Eccentricity ..	HUANG Baowang, TANG Haoyue, SHIFAN Luo, WEILI Li, HAIBIN Wang, WENMAO Liu	1069
Electrical Performance Analysis and System Simulation of Multi-phase Permanent Magnet Synchronous Motor Fault-tolerant Control System .....	HOU Chunyu, GAO Yang	1075
Fault Diagnosis for Distributed Grids and Frontier Exploration of Machine Learning Methods .....	XU Wei, TAN Fuxiao	1081
Research on Switch Machine Fault Diagnosis Based on VMD-1DCNN-BiLSTM .....	KONG XinYue, CHEN Xin	1087
$H^\infty$ Fault-tolerant Tracking Control of Autonomous Underwater Vehicles Based on HOFAS Theory .....	WU Shaoheng, WANG Limin, ZENG Deyu	1093
Stochastic Event-Triggered Fault-Tolerant Control of Linear Systems Against Multi-Channel Stochastic Actuator Faults .....	YANG Xuan, PANG Na, ZHANG Dawei	1099
An Intelligent Multi-fault Diagnosis Method for Asynchronous Motors Based on Depth-Wise Convolutions Enhanced Transformer .....	JIANG YuTao, LI Wenlong, ZHAO QINGLING, WU Qingle	1105
Robust Adaptive Guaranteed Cost Tracking Control for Flexible Joint Robot Based on FAS Approach .....	HU Liyao, GAO Yajun	1111
Fixed-time Adaptive Sliding Mode Control Based on Super-twisting Disturbance Observer for Uncertain Nonlinear Systems .....	LUAN Shouzhen, MENG Bo, ZHEN Wang	1117
Reinforcement Learning with Guaranteed Robustness under Dynamics Modeling Uncertainties .....	PAN Duofeng, CHEN Rong, LI Peng, LU Wenjie	1123
A FAS Approach for Robust Trajectory Tracking Control of a 3-DOF Quadrotor .....	ZHANG Junxiang, REN Weijie, DUAN Yu Lin, DUAN Guangren	1129
Stabilization of a Fractional-order Chaotic System Based on Fully Actuated System Approach .....	WEI Yan-Qiao, SUN Fu Biao, LIU Da-Yan, LIU Guopin, HUA Changchun	1135
Event-Triggered Robust Control Combined with High-Order Backstepping for Pure Feedback Nonlinear Systems with Uncertainty .....	LIANG Yi, ZHANG Luhan, ZHANG Cui-Hua, ZHANG Ying, HUA Changchun	1139
Sliding-mode Predefined-time Control for Full-drive Rigid Spacecraft with Unmodeled Dynamics .....	XU Jiaqi, LI Qiang, MAO Jun	1145
Formation Control of Multi-UAV Based on High-Order Fully Actuated System Approaches .....	ZHANG Zibei, ZHU Jing, ZHENG Hongyuan	1151
Discrete-time Fractional-order Cooperative Control of Multi-spacecraft Based on Fully Actuated System Approach and Disturbance Observer .....	CHEN Yiqi, SHAO Shuyi, CHEN Mou	1157

Predefined-Time Control for Nonplanar Hexarotor UAVs Based on High-Order Fully Actuated System Theory .....	TONG Ruizhi, WANG Runze, SHI Yankui, LI Hongzhen, ZENG Yi	1163
Design of Strongly Stabilizing Controllers for Underactuated Systems: an Example of the Cart–Pendulum System .....	CHEN Yuanbo, XIN Xin, WANG Ziyu	1169
Free Piston Linear Generator Rectification Strategy Based on Active Disturbance Rejection Control and Sequential Model Predictive Control .....	DU Haoyang	1175
Fuzzy $\mathcal{H}_\infty$ Filtering for Singularly Perturbed Jumping Systems Based on HMM Method .....	WANG Guanqi, CAI Chenxiao	1183
Data-driven Finite-time Control for Discrete-time Nolinear Systems .....	LIU Zhiqing, CHI Ronghu, LIU Yang	1189
Event-Triggered Control Based on Neural-Network Observer for Descriptor Jump Systems Against DoS Attacks .....	HAO Mengjuan, FU Yanran, MENG Yanan, WANG Zhihao, ZHAO Zihan, ZHANG Xuotong, ZHUANG Guangming	1194
Bumpless Transfer Switching Model Predictive Control For Switched Linear Systems with Average Dwell Time .....	LI Yunpeng, ZHANG Lixian, HAN Yuejiang, WU Tong, MA Yuting, LU Shengao	1200
Event-triggered Synchronization Control Complex Semiconductor Laser Network with Bit-rate Constraint .....	GUO Jing, HUANG Ling	1206
Dynamic Event-triggered Mechanism for Networked Nonlinear Systems via Output-feedback Control .....	LIU Wenhui, MA Qian, XU Shengyuan	1212
Stability Analysis and Fuzzy Control for Singular Switched Systems with Nonlinear Dynamics .....	MA Yuting, YANG Jianan, ZHI Xiyang, CHEN Jian, ZHANG Lixian	1218
P2P Trading of Multi-VPPs with Integrated PV Energy Storage Systems Based on Multi-Agent Rollout .....	ZOU Haoxiang, WANG Min, QIU Yong, ZHENG Shu, HUANG Qilong, LUO Lizi	1224
Bumpless Transfer Control of Asynchronously Switched Linear Systems with Stochastic Mode-Dependent Sojourn-Time .....	DING Yihang, LIANG Ye, YANG Jianan, DONG Yifei, ZHANG Lixian	1230
Generating Planar Multi-Scroll Attractors from a 3D Chaotic System via Switching Control .....	SUN Changchun, ZHANG Hao	1237
Intermediate-variable-based Non-fragile Estimation for Persistent Dwell-time Switched Systems .....	JIAO Shiyu, YANG Yifan, ZHANG Jiaheng, ZHAO Huanyu, LIU Wei, ZHANG Pengcheng	1243
Nonblocking Supervisory Control with Finite-step Constraints in Agent-Task Systems .....	LI Kaifeng, WANG Xiaoling, LUO Miaohong, WU Yali, SU Housheng	1248
An Improved ADC Effectiveness Evaluation Method for On-Orbit Spacecraft Based on Anomaly Information .....	YANG Zelong, ZHANG Xiangyan, LI Hongfei, LIU Peng, HAN Hongbo, QIN Wei, ZHANG Yunxiang	1254
Ultra-High Frequency Localization Method for Transformer Partial Discharge Based on TDOA and WLS-FA .....	DU Yunlong, DUAN Xiuyu, JIAHUI Dai, YU Xingkai	1259
3D Reconstruction of Cables for Live-Working Robots in Distribution Networks .....	YAN Jingtao, LIU Liaoxue, GUO Jian, GUO Yu	1265
Trajectory Tracking Control of Lunar Explorer Operation Robotic Manipulator Based on Fully Actuated System Approach .....	XU Jing, ZHANG Kai, WU Yue, NING Zhaoke	1271
Motion Trend Prediction of Unmanned Surface Vessels Based on Physics-Informed Neural Network .....	CHENG YongHao, YU Jian, HUILI Fan, HE Feiyang, LI Qihang, HUANG Qilong	1278
Adaptive Kalman Filter for Dynamic Systems Localization with Skewed Heavy-tailed Noise .....	ZHANG Zihao, WANG Guoqing, YANG Chunyu, MA Lei	1284

Design and Implementation of Distributed Radar Multi-Source Data Fusion Software Based on Qt  
 ..... ZHANG Zhe, LI Yinya, QI Guoqing 1290

A New Ultrasonic Phased Array Scanning Method for Internal Inspection of Gas Pipelines  
 ..... YANG XuDong, LIAO MingYan, GAO Ming, CHEN Zhongyu, SHENG Li 1296

State Estimation with Location Privacy Protection  
 ..... YIN Shijie, WANG Yulong, CAI Chenxiao, LIN Hong 1302

A Comprehensive Comparison of Global Space Situational Awareness Data and Information Sharing  
 Systems ..... YANG Zelong, ZHANG Xiangyan, LI Hongfei, WANG Xiaochen, ZHANG  
 Mingjiang, HAN Hongbo, CHEN Xi 1308

3D Reconstruction and Pose Estimation of Non-cooperative Objects Based on Structure from Motion  
 ..... HUANG Xinrui, ZHU Yiman, WANG Lu, LIU Liaoxue, GUO Yu 1316

Resilience Assessment of Multimodal Transportation Networks: A Hypergraph-Based Modeling Frame-  
 work ..... YIN Mengmeng, TANG Kun, DING Jinhong, GUO TANGYI 1322

Planetary Landing Site Selection Using Multi-Modal Information Fusion  
 ..... YANG Zhenyu, WANG Sihan, WANG Wuyue, GUO Yanning, RAN Guangtao 1328

BEVFusion-Based Multimodal Perception Optimization: Dynamic Spa-  
 tial Adaptation and Edge-Aware Enhancement for Autonomous Driving  
 ..... GUO Jiajun, SHAN Liang, MA Enhui, HU Dongzhe, QI Zhidong 1334

Adaptive Target Threat Assessment Algorithm Based on BLS and Variational Bayesian  
 ..... LV Tao, CHEN Yuhang, GE Quanbo 1340

Dynamic Decoupled Event-triggered Nonlinear State Estimation for Sensor Networks with Incomplete  
 Measurements .... LIANG Yuan, CHEN Ye, CHEN Sujuan, ZHANG Chunyan, LI Yinya, QI Guoqing 1346

Distributed IMU Pose Estimation of Hyper-Redundant Manipulator Based on ESKF  
 ..... ZHU Cheng, LIU Liaoxue, XU Lisong, GUO Jian 1352

Sequential Covariance Intersection-based Distributed Nonlinear State Estimation under Denial of Service  
 ..... HUANG Tianhong, MA Yinping 1357

Adaptive Iteration Differential Private Federated Learning with Gradient-Guide Synthetic Data  
 ..... LIU Chengzu, XING XuYang, YUAN Deming 1363

Defective Insulator Detection Algorithm Based on Improved YOLO V7 Lightweight Model  
 ..... HAN Jinhui, JIANG Haifeng, ZHANG Xiang, LV Weiwei 1370

State-of-Health Estimation of Lithium Battery Based on PKO-Bagging-AdaBoost Ensemble Learning  
 Algorithm ..... HAN Zhipeng, CHEN ZeYang, PAN Tinglong, YANG Weilin, XU Dezhi, WANG Yan 1376

Research on Fish School Quantity Detection Algorithm Based on HyperC2Net+MANet Improved  
 YOLO11 ..... LI Yaqing, ZHU Yun, ZHOU Feng, WEI Maochun, CHEN Jialuo 1382

A YOLO-based Algorithm for Detecting Key Components on Subway Train Roof  
 ..... LIU Ning, ZHANG Juhui, XING Zongyi, ZHOU Peng, ZHANG Hui Fei 1388

Subway Pantograph Arcing Detection Based on YOLOv10-CSEC  
 ..... ZHOU Peng, FU Yunxiao, XING Zongyi, LI Sheng, LIU Ning 1394

MST-BILSTM: an Improved Bi-LSTM Method Based on Multi-scale Spatio-  
 Temporal Feature Fusion and Attention Mechanism for ECG Recognition  
 ..... MA Minghao, LINGLING Wang, ZHAO Yanqi, WANG Lili 1398

Energy Management Strategy of PEMFC Hybrid Power Supply System Based on Q-Learning  
 ..... XU Junsong, QI Zhidong, ZHOU Jie, SHEN Zhaoyang, BAI Liyin, CAO ZhongBo 1404

KC-BiGRUAtt: A Clustering-Enhanced Deep Framework for Machinery Remaining Useful Life Prediction  
 ..... WANG Xiangxian, LIU Guoping 1410

FeatureFuser-LLM: Multi-Scale Feature Fusion with Adaptive Positional Encoding for LLM-Based Time Series Forecasting ..... GAN Yiping, LIU Guoping 1416

Real-Time Object Grasping and Placement in Dynamic Environments via Model-Based Policy Gradient ..... LI Yujing, YIN Shihong, CHEN Xizhe, XIANG Zhengrong 1422

A Traffic Road Small Target Detection Algorithm Based on Improved YOLOv8n ..... CAI Yixuan, LIN Simao, FAN JiaRui 1428

Lightweight RT-DETR with Dynamic Optimization and Multi-Scale Attention for Real-Time Traffic Object Detection ..... XU Hengwei, LI Yuan, LI Zhaolei, ZHANG Rui, WU Xiang 1433

Influence of the Discretization Methods for the Model of Lithium-ion Battery ..... ZHANG Zepei, FAN Yuan, KUANG Huyong 1439

ChanCrossFormer: A Ballistic Trajectory Prediction Model Integrating Channel Attention and Cross-Attention Mechanisms ..... ZHONG Jun, ZHOU Yuhang, SHEN Yukuang, YUAN Jiamei, WU Xiang 1444

Fully Actuated System-Based Deep Learning Method for Blast Furnace Fault Diagnosis ..... YANG Yi, WANG Minghao, LI Yanjing, CEN Hanyu, ZHAO Liang 1450

An Effective Model Based on STmixing-LSTM for Short Term Wind Power Prediction ..... LI Tianci, PENG Fuming, QUAN Hao, MA Xiang 1457

End-to-end Model for Vision-language Navigation Based on Pre-trained Model ..... WU Mingyi, FENG Bin, FAN Weihua, FENG Yifei 1463

A Dual-Channel Decision Fusion Framework Integrating Swin Transformer and ResNet for Multi-Speed Gearbox Fault Diagnosis ..... DOU Hanyang, MA Lifeng, GAO Chen, ZHANG Yong 1469

An Improved YOLOv8 Algorithm for Infrared Recognition of Train Running Gear Components ..... SHI Chucheng, ZHANG Yong, LI Qiuyang, WANG Hui, JIAN Yihang 1475

基于多频域全驱系统的时间序列预测 ..... LIU ZhiYuan, YAO Tianyu, LIN Rui, YAN Kaichen, WANG Minghao, YANG Yi, ZHAO Liang 1479

Big Data Analysis from the Perspective of Fully Actuated System ..... ZHAO Liang, GUO Yifan, LIN Rui, YANG Yi 1485

Research on Pursuit-Evasion Strategies for GEO Satellites Using PD-DDPG ..... SHEN Gang, REN Zhi Hang, ZHONG Jun, ZHAO Gaopeng, WU Xiang 1493

FAME: A Multi-Encoder Time Series Forecasting Model Based on Fully Actuated System Theory ..... SUI Chengzhan, LIN Rui, LIANG Jiayuan, LIU Jie, ZHAO Liang 1499

Multi-Agent Deep Reinforcement Learning for Regional Traffic Signal Control: A Topology-Aware Approach ..... WANG Shan, ZHOU Zhuping, WANG Zixu 1505

Learning Higher-Order Migration Patterns: A Hypergraph Approach to Urban Mobility Prediction ..... DING Jinhong, TANG Kun, YIN Mengmeng, GUO TANGYI 1511

Fasteners Object Detection for Low-light Metro Undercarriage Environments ..... XIONG Zi, ZHAN Hongyun, LIU Liaoxue, GUO Yu 1517

Short-Term Passenger Flow Prediction for Subway Based on Bi-LSTM and Random Forest ..... LIU Xinru, XU Peiyu 1523

JKAN-YOLO:一种无人机航拍小目标检测方法 ..... LI Qianqian, FAN Jun-fang, LI Xinru 1529

Improved DQN Path Planning Method Based on Transformer ..... FENG Yifei, FENG Bin, FAN Weihua, WU Mingyi 1535

Time Series Forecasting with Multi-Scale Feature Extraction and Explicit Periodic Modeling ..... YUAN Jiamei, SHEN Gang, CHENG Zhipeng, ZHONG Jun, WU Xiang 1540

Trajectory Prediction Algorithm for Multi-agent Systems Based on HOFA-Informed Neural Networks ..... DU Qinlong, HUO Xin, LIU Qianning, MI Baohan 1546

Two-stage Multi-UAV Path Planning Based on MAPPO  
 ..... WANG Yudie, YAN Qingzhong, REN Zhi Hang, ZHAO Gaopeng, WU Xiang 1551

Ghost-YOLO: A Lightweight Traffic Sign Detection Framework via GhostNetV3  
 ..... CHU Xiaosong, ZHOU Zhuping, LIAO Wangping, PAN Xianshi 1557

Research on Laser Warning Angle Prediction Based on Deep Neural Networks  
 ..... NIU ChenLin, LI Xiao, CHEN Xinwen, WANG Yaqi, YANG Shuai, 1563  
 ZHANG Rui, WANG Zhibin, LIU Shun

Research on Multi-agent Obstacle Avoidance Navigation Based on Hierarchical Deep Reinforcement Learning  
 ..... HANQI Sun, LI Rui, MIN Tian, SHI Ying Jing 1569

Dual Cross-Lingual Alignment for Multilingual Dialogue Generation  
 ..... HUANG Jining, LU Nanchang, CHEN Guangming, LIU Dayang, WU 1577  
 Baodong, LIANG Xiaoming, HUANG Zebo, JIA Xiaoguang, MIAO Zihui

Excitation-Oriented Forgetting Recursive Least Squares ..... BIN Lukai, XU Juncheng, LI Jiangang 1583

Leveraging Knowledge Graph and Large Language Model Synergies for Intelligent Fault Analysis in Urban Rail Transit Signaling Systems ..... SU Tianfeng, MA Chenjing, CHEN Xin, WANG Xiaohan 1590

A Deep Learning Framework for Rail Station Passenger Flow Prediction with Temporal Knowledge Graph Embedding ..... WANG Xiaohan, CHEN Xin, FU Licong 1596

Knowledge Graph and Deep Learning-based Fault Diagnosis for Urban Rail Signal Systems  
 ..... NIAN Xinyi, ZHOU Zhuping 1602

SDMStega:Robust Steganography Based on Stable Diffusion Model and Spread Spectrum Technology  
 ..... LONGLONG Guo, MAO Yao-bin 1608

Risk Prediction of Traffic Accidents Based on Temporal Knowledge Graphs and Enhanced Multi-Graph Attention Networks ..... LIU Ruihao, GUO TANGYI, CHEN Yifan 1614

Pedestrian Detection in Urban Rail Transit Based on Deep Learning  
 ..... YU Shuai Bo, HE Liu, ZHOU Wei 1622

Adaptive Intermittent Control for Output Synchronization of Reaction–diffusion Neural Networks  
 ..... WANG Kaiwen, SONG Xiaona, ZHENG Danjing, WANG Xubo 1628

Quasi-Synchronization of Generalized Inertial Neural Networks Based on Adaptive Event-Triggered Control ..... WANG Xubo, SONG Xiaona, ZHENG Danjing, WANG Kaiwen 1634

Fully Actuated System Approach to Adaptive Control for Underactuated Tower Crane Systems  
 ..... ZHANG Menghua, ZHAO Jing, LIU Weizhen 1640

Prescribed-time Control for Nonholonomic Systems: A Fully Actuated Systems Method  
 ..... ZHANG Jiaming, LIU Yang, NIU Ben 1645

Event-triggered Control for Large-scale Systems with Unknown Coefficients and Actuator Faults: A Fully Actuated System Approach ..... YE Yueyao, FENG Yiyu, ZHANG Xianfu 1650

Event-Triggered Adaptive Tracking for Nonlinear Systems Based on Fully Actuated System Theory  
 ..... QIU Yunfei 1656

Discrete-Time HOFA Adaptive Control for A Type of Combined Spacecraft with Unknown Parameters and State Delays ..... CUI Kaixin, LU Hao 1661

Active Power Decoupling Control Based on Fully-Actuated System Approach for Single-Stage AC-DC Converters ..... WEI Yadong, ZHANG Bo 1667

Further Results on Full-Actuation of Linear Boolean Control Networks  
 ..... DING Yuanpeng, YANG Yunsi, FENG Jun-e, YU Yongyuan 1675

Fully-actuated System Approach Based Trajectory Tracking Control of Wheeled Mobile Robots  
 ..... WANG Yao-Wei, ZHANG DuFei, WU Qi, WU Xiang, GU Cao-Yuan 1681

Finite-time Sliding Mode Control of Uncertain Hydraulic Manipulator via High-Order Fully Actuated System Approach .....	CHEN Zhengsheng, ZHOU Mengyang, DOU Weihao, CHE Honglei, LIU Jiayin, TIAN Yang	1687
Low-complexity Prescribed Performance Control for Perturbed Robotic Manipulators: A Fully Actuated System Approach .....	DING Yi, DUAN Guangren	1693
Robust Trajectory Tracking for UVMS via Fully Actuated System Theory and Liquid Neural Networks .....	WU Jiawei, LI Bing, HUANG Ling, LI Jiashuai, LI Mingze	1699
Improved Terminal Sliding Mode Control with Voltage-Current Dual-Loop Regulation on Dual Active Bridge Converter .....	YANG Sen, WEN Xi, JING Mengmeng, XING Xiangyang	1705
Further Results on the Fully Actuated System Approach to Control of Overhead Cranes .....	YAO Fuxing, LIU Zhijie, CHEN Liangming, YUE Tianqi, KONG He	1712
Finite-Time Substabilization for Nonholonomic Systems with Time Delay: A Fully Actuated System Approach .....	ZHANG Xue, DUAN Guangren	1718
Robust Control Based on Unknown Input Disturbance Observer for Fully Actuated Systems .....	JIANG Hong, DUAN Guangren	1723
A Unified Representation of Different Dynamics Using Deep Koopman Operator .....	CHEN Rong, PAN Duofeng, LI Peng, LU Wenjie	1729
Nonlinear Control of a Fully Actuated Robotic Hand Using High-Order Sliding-Mode Controller for Prosthetic Applications .....	SARWAT ASRA, LU Wenjie, WANG Jiaole, LI Peng	1735
High Order Fully Actuated Modelling and Control of an Unmanned Vehicle .....	LIU Jiamin, LIU Xiaoxu, ZHANG Tan	1743
Adaptive Control for Uncertain High-Order Fully Actuated Nonlinear Systems with Deferred Constraint .....	YUE Huarong, XIA Jianwei	1749
Bearing-Only Circumnavigation of a Varying Velocity Target for AUV Based on Fully Actuated System Approach .....	ZHANG Zhaoming, SU Haifan, YANG Ziwen, ZHU Shanying	1754
Observer-Based Robust Control for Flexible Robotic Manipulators with Model Uncertainties via Fully Actuated System Approaches .....	XIANG Yuzhu, YI Weiwei, GUO Jian	1760
Prescribed Performance Tracking Control for Uncertain Strict-Feedback Systems Using Fully Actuated System Approach .....	DUAN Yu Lin, ZHANG Jiaming, ZHANG Junxiang, DUAN Guang-Ren	1766
Adaptive Prescribed Performance Control for High-speed Morphing Vehicle Based on Fully Actuated System Approach .....	WANG Baisen, WANG Peng	1773
公式章1 节1Predefined-Time Control for Unmanned Surface Vehicles with Actuator Attacks Based on Fully Actuated System Approaches .....	PENG Wangchong, CUI Yang	1781
Robust Optimal Control for Roll Angle Based on Fully Actuated System Approach .....	CHEN Shiwei, WANG Wei, ZHU Zejun, FAN Jun-fang	1787
Improved Observer-based Fully Actuated System Approach to 3-DOF Quadrotor Control .....	ZOU Jianpeng, REN Weijie, DUAN Guangren	1793
Tracking Control for Cart-pole Pendulum System Based on Fully Actuated System Theory .....	LIU Haowen, REN Weijie, LI Ping, DUAN Guangren	1799
Parametric Design of Controller for Cube Robot Based on Fully Actuated System Approach .....	WANG Zixun, DUAN Guangren, LI Ping	1805
Adaptive Neural Control for Flexible Joint Manipulators with Uncertainties: A Fully Actuated System Approach .....	FAN Jinpeng, DUAN Guangren, REN Weijie	1811
Noncertainty-Equivalent Adaptive Control for Submarines Using SDU Decomposition: A FAS Approach .....	CHEN Zhijun, DUAN Guangren	1817

Tracking Control for N-Link Flexible-Joint Robots with Output Constraints and Disturbances: an FAS Approach .....	JIANG Nan, ZHANG Zhongcai, GAO Yang, WU Yuqiang	1823
Adaptive Trajectory Tracking for Nonminimum Phase HSVs Based on HOFA System Approaches .....	ZHOU Yirong, QI Ruiyun	1826
Adaptive Control of Nonlinear Systems with Parameter Uncertainty Based on the Fully Actuated System Approaches .....	WANG Liji, WEI Zhicheng, MIN Huifang	1833
High-gain Observer-based Output Feedback Stabilization for Nonlinear Systems with Quantized Input Signal: A Fully Actuated System Approach .....	LIU Lin, DUAN Guangren	1839
Event-Based Prescribed Performance Control for Thermoacoustic Systems with Unknown Flame Response: A Fully Actuated System Approach .....	ZHAO Yuzhuo, MA Dan, WANG Yuzhong	1845
Output Tracking Control of Mobile Wheeled Inverted Pendulum with State Estimation via Fully Actuated System Approach .....	CHEN Shengjia, LIU Haowen, LI Ping	1851
Adaptive Trajectory Tracking Control of Quadrotor UAV under Turbulent Winds via Fully Actuated System Approach .....	LI Aize, WEN Liyan, SIRUI Liu	1857
Intelligent Control of Hydraulic Excavators Based on Data-Driven GPC and High-Order Fully Actuated Systems .....	WEN Xin, GUAN Zhe, CHEN Kuo, HUA Changchun	1863
Roll-Stabilized Fully Actuated Control of Guided Projectiles with Practical Actuator Constraints .....	WANG Binyuan, FAN Jun-fang, QUAN Fangyi	1869
A Novel Multi- Level Cooperative Control Method for Agile Satellite with Non-contact Actuation .....	HUANG Jing, YAN Xiaoxuan, SUN Lujun, HUANG XiaoGuang, LV Dong Yuan	1874
Design of a Data-Driven Adaptive Controller Based on FF-ITDL for High-Order Fully Actuated Systems .....	FU Yonghe, GUAN Zhe, YU Hao, HUA Changchun	1880
Fully Actuated Approach for Safety-Critical Control of Underactuated Systems via Differential Flatness .....	JIA Xiang, LI Bochen, WANG Chenggang, SONG Lei, HUANG Dan, DU Xuanmin	1886
Predefined-Time Tracking Control of Robotic Manipulator: A Fully Actuated System Approach .....	ZHANG Ji-Hao, CHEN Qian, LI Yi-Fan, GE Ming-Feng, LIU Zhi-Wei	1892
A High-Order Fully Actuated System Approach to Control of the 2D Cubli .....	WENG Zongbiao, KONG He	1898
A Predefined-Time Consensus Algorithm for Unmanned Vehicles Based on the Fully Actuated System Approach .....	QIU Bingxin, LI Yi-Fan, LIU Zhi-Wei, GE Ming-Feng	1903
Practical Prescribed-time Tracking Control for Underactuated WMR: a Fully Actuated System Approach .....	QIANG Jiaping, LI Li, CAO Yipeng, LIU Chao	1909
High-Order Fully Actuated System Method-Based Control for DC Microgrids .....	YU Yi, LIU Guoping, SHI Peng, CHUNG Chi-yung	1914
FAS-Based Attitude Tracking Control with Prespecified-Time Sliding Mode for Rigid Spacecraft .....	JIA Yan, LI Yi-Fan, CHEN Qian, DING Teng-Fei, GE Ming-Feng	1921
Tracking Control of Manipulators with Unknown Disturbances: A Novel Fully Actuated System Method .....	GAO Jiawei, LI Yi-Fan, CHEN Qian, GE Ming-Feng, LIU Zhi-Wei	1927
Fixed-time Incremental Sliding Mode Control of Aircraft with Actuator Faults .....	LIU Jiayu, ZHANG Shuyu, ZHEN Yan, HOU Mingzhe	1932
Extended State Observer Based Fully Actuated Sliding Mode Trajectory Tracking Control of Space Manipulator .....	WEI Weiwei, MA Xiaolong, ZHAO Yue, MENG CHEN, ZHANG Ouyang, LIU Zhuang, LIU Jianxing	1937
Population Transfer in Quantum Systems Based on Fully Actuated System Approach .....	LI Jia Xiang, XU Huilong, MIAO Zibo	1943

Mixed-Order Nonaffine Strict-Feedback Systems: A FAS Approach Treatment .....	DUAN Guang-Ren, LI Ping	1949
An FASA-Based Predefined-Time Tracking Control for Marine Surface Vehicles .....	ZHENG Xing, LI Yi-Fan, CHEN Qian, DING Teng-Fei, GE Ming-Feng	1957
Disturbance Observer-Based Sliding Mode Control of PMSM via High-Order Fully Actuated System Approaches .....	JIAO Yinjia, SHEN Xiaoning, QU Jianan, TIAN Juxing, LIN Xinpo, LIU Zhuang, LIU Jianxing	1963
Adaptive Neural Heading Control for Roll Reduction of FLNG in Multi-directional Sea Conditions .....	CHEN Yueyi, LIANG Xiao-ling, HONGCHAO WANG, XIANGBO Liu, LIONG Ching Theng, HOW Bernard Voon Ee, DAN Bao, GE Shuzhi Sam	1969
Disturbance Rejection Observer Parametric Design for Quadrotor with Suspended Payload via Fully Actuated System Approach .....	YAN Bing, ZOU Yun	1975
Prescribed-time Trajectory Tracking Controller for Flexible-joint Manipulators: A High-order Fully Actuated System Approach .....	QIU Hanbin, ZHANG Jiahao, ZHANG Ying	1981
Solving Trajectory Tracking of High-Order Fully Actuated Systems by Iterative Learning Control .....	ZHANG Zeyi, JIANG Hao, SHEN Dong	1987
Data-driven High-order Fully Actuated Iterative Learning Control for Unknown Nonaffine Nonlinear Systems .....	LIN Na, CHI Ronghu	1993
Event-trigger Adaptive Dynamic Programming-based Coordinate Control of Modular Unmanned System .....	AN Tianjiao, JING HaoXuan, MA Bing, DONG Hongbo, DONG Bo, ZHANG Zhenguo	1999
Anti-Disturbance Hierarchical Sliding Mode Controller for Deep-Sea Cranes with Adaptive Control and Neural Network Compensation .....	ZUO Qian, WU Shujie, QIAN Yuzhe	2005
Neural Adaptive Control for Nonlinear Cyber-Physical Systems under Random False Data Injection Attacks .....	ZHANG Qiang, SHAO Xingling, CHEN Jin	2013
Efficient Federal Learning in USV-AUVs Collaborative Networks .....	GAN Liang, ZHAO Yanqi, MA Minghao, WANG Lili	2019
Model-Free Adaptive Tracking Control under Homomorphic Encryption Mechanism .....	WANG Dewei, LIU Shuai, ZHANG Yong	2025
Neural Network-Based Adaptive Control for Uncertain Nonlinear Systems with Input Quantization .....	WANG Shuo, YAN Fei, GU Guoxiang	2031
An Unscented Kalman Filter Algorithm for Rebar Signal Processing Based on an Adaptive Forgetting Factor .....	FAN Jianwei, HUANG Ling, LI Baoluo	2037
Adaptive Fixed-Time Switching Threshold Control for Uncertain Nonlinear Systems with Unknown Control Coefficients .....	LIU Yuxuan, HU Ze Yun, ZHANG Cui-Hua, ZHANG Ying, HUA Changchun	2043
Adaptive Sliding Mode Control for Multi-Segment Cable-Driven Continuum Manipulators .....	LU Yang, WANG Lu, GUO Jian	2049
A PSO-Neural Network Hybrid Algorithm for Optimal Jamming Resource Allocation .....	YU Xu, LI Xingxiu, HE Shan, WU Panlong	2055
Optimal Tracking Control for Wheeled Mobile Robot via Adaptive Dynamic Programming with Concurrent Learning .....	GOU Jun, LIU Pengda, WANG Huichao, CHEN Ju	2061
A Knowledge-Driven Generation Method of Legged Control Strategy for Space Climbing Robots .....	CHEN Zhexuan, YAO Senchun, XU Xuanhui, YAN Yuchao, DI Xinpeng	2066
Multi-Constraint Trajectory Tracking Control for Spacecraft Based on an Integrated Decision-Control Architecture .....	LONGYU Tan, MENG Yizhen, HUANG Jing, JINGXI Liu	2072

Adaptive Prescribed-Performance Control of Nonlinear Strict-Feedback Systems Based on State-Triggered Mechanism ..... JIA Tong, AN Liwei 2078

A Novel Dynamic Periodic Event-Triggered Prescribed Performance Control of Uncertain Semi-Strict Feedback Systems with Application ..... XU Xindi, HOU Mingzhe, TAN Feng 2084

Collaborative Optimal Control Strategy for Complex Distribution Networks with Large-scale Wind and Solar Integration ..... WANG Kun, WANG Cheng, PU Hechun, LIU Shiqi, LIU Wei 2090

Optimal Dispatch-control of an Integrated Energy System Based on Adaptive Model Predictive Control ..... PU Hechun, JIN Zhenqiang, WANG Kun, LV Guangqiang, ZHANG Junfang 2096

Frequency Support Control of Wind Turbines Based on Frequency Response Analysis ..... SUN Ze, WANG Jie, CHEN Zaiyu 2102

Bias-Policy Iteration Based Adaptive Dynamic Programming for Nonlinear Fully Actuated Systems ..... JIANG Huaiyuan, ZHANG Ruiqing, ZHOU Bin 2109

Cooperative Frequency Control of Microgrids Based on Quantum Reinforcement Learning ..... LIU Wei, PENG Zhang 2115

Adaptive Clamping Force Control of Electromechanical Brake System Based on High-Order Fully Actuated System Approaches .... WANG Wenzhuang, WANG Jizhe, WANG Yuchen, SHI Wenhao, ZHANG Yahui 2120

An Adaptive Control Method for Humanoid Robots Based on Fully-actuated Systems ..... SUN Hao, HE Liang, HUANG Ling 2126

Adaptive Control of Fully-Actuated Cable-Driven Parallel Robots for Mars Rover Landing Simulation ..... LU Yanqi, HAN Shuo, YAO Weiran 2132

Event-triggered Output-feedback Control of the 1-D Parabolic PDE Systems with Spatially-varying Coefficient ..... GUO Runsheng, BAO Junchen, ZHOU Bingke 2138

Neural Network Learning Control for Friction Compensation with Enhanced Generalizability ..... HUANG Yibin, XIE Wentao, LI Jiangang 2142

Composite Learning-based Adaptive Finite-time Parameters Estimation and Control for High-order Fully Actuated Systems ..... ZHANG Yu, CAI Yixu, PANG Keli, LIU Guopin, HUA Changchun 2149

Adaptive Fixed-time Control of High-order Fully Actuated Systems Using Dynamic Regressor Extension and Mixing Estimators ..... ZHANG Yu, CAI Yixu, PANG Keli, ZHAO Licui, HUA Changchun 2155

Noncooperative Game Based on Iteration Learning for Nonlinear Optimal Regulation ..... LIU Yating, QI Guoqing, LI Yinya, SHENG Andong 2161

Networked Adaptive Backstepping Control for A Class of Strict-Feedback Nonlinear Systems Using Event-Triggered Output and Control Signals ..... LIU Xinmi, CHENG Tingting, ZHANG Dawei 2167

Adaptive Prescribed-Time Force/Position Tracking Control for Flexible-Joint Robotic Manipulators ..... ZHENG Zengwei, ZHANG Jiahao, ZHANG Ying 2173

Fuzzy Variable Droop Control Strategy for Wind Power Participation in First Primary Frequency Regulation Considering Source-Load Fluctuation Characteristics ..... ZHANG Xiaolian, CHEN Hao, QI HU, FENG Chong 2179

Model-free Adaptive Control Strategy for Three-phase Two-level Voltage Source Inverters ..... HU Xuchao, LIU Cheng-Lin 2187

Design of a New Pump-Suction Surface Cleaning Robot ..... YUYANG Zhang, ZOU Wencheng, LI Sheng 2193

Adaptive Backstepping Tracking Control of Space Manipulator Based on Neural Network ..... ZHAO Qin, DUAN Guang-Ren 2198

Finite-Time Tracking Control for Wheeled Mobile Robots with Uncalibrated Parameter and Disturbances	ZHANG Guosheng, ZHU Zheyi, HASAN Md Mahmudul, SHI Shang	2203
Fully Actuated System Approach for Vehicle Lateral Control	SHI Ruihe, DUAN Guangren	2209
Unwinding-Free Performance of a Sliding-Mode Spacecraft Pose Controller Designed by Fully Actuated System Approaches	XIAO Fu-Zheng, YU Yongheng, CHEN Li-Qun	2215
Tracking Control of Quadrotors Based on a High-Order Fully Actuated System Approach	ZHAO Zeyuan, LI Xianwei	2221
Robust Stabilizing Control of Underactuated Cart-pendulum System Using Fixed-time Hierarchical Sliding Mode Method	YU Junyao, GONG Shuli, ZHANG Ancai, YUAN Quan, XINCHENG Gui	2227
Motion Planning Method of Continuum Manipulator Based on Multi Objective Optimization	WANG Zihe, LIU Liaoxue, WANG Lu, GUO Yu	2232
USV Swarm Defense Optimization for Island Protection Based on Enhanced IDQ	ZHUO Xingchen, TANG Zhixian, CHENG YongHao, HUANG Qilong	2238
Equivalent Dynamic Modeling of Super-Long Radar Antenna	YAN Xiaoxuan, TIAN Lulu, HUANG Jing, ZHU Dongfang	2244
Attitude-orbit Coupling Control Based on the Fully-actuated Systems Approach Utilizing Dual Quaternion	LI Xuesong, QIAN Yingjing	2250
Path Planning for Spacecraft Obstacle Avoidance Based on Improved Sparrow Search Algorithm	WU Han, HAN Fei	2257
Nonlinear Extended State Observer-based Closed-loop Control for Underactuated USV: High-order Fully Actuated System Approach	YANG Yana, CHEN Long, ZHOU Xiaoshuang, CHEN Shu-zong, HUA Changchun	2263
Vision-Based Cooperative Transport for Two Mobile Robots in Communication-free Mapless Environments with Guaranteed Payload Safety	GUAN Renhe, WANG Yan	2269
Application of Fuzzy Adaptive High-Order Fully Actuated Control Strategy in SbW for Angle Tracking	GENG Zhenghui, WANG Yuchen, ZHENG Linghuan, REN XIN, ZHANG Yahui	2275
Adaptive Task-space Robust Control for Hydraulic Excavators: A High-Order Fully Actuated System Approach	ZHANG Bo, HUA Changchun, ZHOU Jiafeng, MENG Rui, LI Yafeng	2281
Adaptive Tracking Control for Hydraulic Actuators Based on the Fully Actuated System Approaches	ZHOU Jiafeng, HUA Changchun, ZHANG Bo, MENG Rui, LI Yafeng	2286
Equivalent Plate Dynamic Modeling and Response Analysis of Truss Structures for Control-oriented Applications	SUN Jie, SUN Jun, ZHU Dongfang	2291
Lane-changing and Overtaking Trajectory Planning for Autonomous Vehicles Based on Control Barrier Functions	HU Jinfei, MAO Wenjie, LIU Yiqun, DAI Lifei, ZHANG Changzhu	2297
Fixed-time Robust Stabilization Control of Underactuated Bridge Crane System with Matched Disturbance	LAN Weicheng, ZHANG Ancai, YU Junyao, PANG Guochen, QIU Jianlong	2303
Teleoperation System Design for Live Working Robot Based on Position-Velocity Mapping	WANG Chenhao, WANG Zihe, LIU Liaoxue, GUO Yu	2308
Research on Control of Magnetic Suspension Rotor System under Moving Base Based on Disturbance Observer	HUANG XiaoGuang, XI Chen, LV Qichao, LV Dong Yuan	2314
Sliding Mode Control for Flexible Joint Space Robot via Nonlinear Integration	ZHANG Yongkang, WANG Lu, LIU Liaoxue, GUO Yu	2320
An Efficient Algebraic Model Predictive Control (AMPC) for Unmanned Surface Vessels Path Following	LI Wei, JIE Bai, ZHOU Han, LIN Zhiyun	2325

LESO-MPC-Based Control for Test Mass Capture in the Release Phase of Gravitational Wave Detection Satellites .....	YU Rongqing, XIAO Yan, YE Dong	2330
Frequency Support Method for Offshore Wind Power VSC-HVDC System Based on Dual-Terminal Symmetric Coordinated Inertial Synchronization Control .....	WANG Jie, XU Tianyi, CHEN Zaiyu	2337
Observer Design and Attitude Control for Dumbbell-shaped Spacecraft Using a Fully-actuated System Approach .....	LI Yuehang, ZHANG Feng, GAO Zhaohui	2343
Attitude Control of Rigid Spacecraft Based on the Theory of Nonlinear Negative Imaginary Systems .....	YU Wenqi, SONG Zhuoyue, WANG Yijin, LI Huifang	2349
Adaptive Control for Active Rear-Wheel Steering System Based on High-order Fully Actuated System Coordinated with Fully Actuated Sliding Mode Control for Traction Control System .....	FENG Kaiyang, LI Zhaonan, WANG Jizhe, WANG Yuchen, MA Kun, ZHANG Yahui	2355
A DRL-based Path Following and Obstacle Avoidance Method for USV in Water Areas with Environmental Disturbances .....	ZHANG Weilong, SHAN Liang, CHANG Lu, YAN Jianhu, CHEN Piaoyang, DAI Yuewei	2361
Improved Complete Coverage Path Planning Algorithm for Wall Climbing Robot .....	HU Dongzhe, QU Yi, CHEN Piaoyang, GUO Jiajun, SHAN Liang	2367
Path Planning Based on Fusion of Improved A* and DWA Algorithm .....	CHEN Piaoyang, SHAN Liang, HU Dongzhe, ZHANG Jinlong, LI Jun	2373
Research on the Unmanned Tank Cooperative Maneuvering Strategy Based on Deep Reinforcement Learning .....	WU Ye, ZHANG Xianchun, CHEN Xiufeng	2379
Primary Frequency Control of Deloaded Wind Turbines Considering the Pitch Angle Dynamic Process .....	ZHANG Xinchen, GU Wei	2387
Fully Actuated System Approach of Prescribed-time Spacecraft Elliptical Orbital Rendezvous .....	GAO Xiangyu, CHEN Mengjie, LV Lingling	2393
Integrated Hierarchical Control for Quadrotor-Slung Payload System .....	MA Enhui, SHAN Liang, CHEN Piaoyang, ZHANG Jinlong, LIU Cheng-Lin	2398
Anti-Saturation Quantization Control for Quadrotor Attitude: Dynamic Surface-Based RBF Adaptive Approach .....	ZHANG Yixiao, XU Xuesong, PENG Yihui, GE Quanbo, YU Yao, ZHANG Yanling	2404
NESO Based Ultra-Local Model Predictive Control for Autonomous Vehicle Path Tracking and Roll Stability .	JU Tianlin, WANG Haoping, TIAN Yang, HAN Yixin, AHMED ALI Sofiane, PUIG Vicenç	2410
Inverse Kinematics Solution for Rope-driven Continuum Robot Based on Gray Wolf Optimization Algorithm .....	WANG Yixuan, SHI Haoxuan, XIA Yu, WANG SongYu, ZHU Wenhao, GUO Yu	2416
Fixed-time Feedback Control Design of Input-delay Spacecraft Rendezvous System Based on Fully Actuated System Theory .....	ZHANG Baowen, LU Qianqian, CHEN Mengjie	2421
Dynamic Temperature Simulated Annealing Algorithm for the PCB Assembly Process .....	YANG Lilong, BI Yuhang, LIU Zhitai, LI Zhan, SUN Weichao	2426
A Novel Seven-Level Inverter Based on Switching Capacitor .....	ZHANG Xinyu, LV Guangqiang, YANG Qianxi	2432
QEMU-Based Simulation of On-Board GNC System .....	GONG Cheng, YU Hao	2438
A Hybrid Transformer-BiLSTM-Att Framework for Dynamic Prediction of Thickness Deviation in Cold-Rolled Aluminum Plates .....	XIAO Yaning, LIU Guoping	2442
Vibration Suppression of Flexible Manipulator Driven by PMLM Based on SO-LADRC .....	TONG Sheng, YAN Jianhu, DUAN Zhiyong, SONG Yuanjun	2448
Design and Implementation of an Interactive Monitoring System with Cloud-Edge Collaboration for Smart Manufacturing .....	ZHANG Bowei, LIU Guoping, LI Kunjie	2454

Extended State Observer-based Hierarchical Objective Optimization Model-free Predictive Control for Three-level NPC Inverter .....	YANG Ziyuan, LI Shengquan, KAN Shiqi, CAO Kaiwen, LI Juan	2460
电网对称故障下构网型变流器自适应限流策略 .....	DONG Liang, ZHAO Zhihong, XU Yiyang, CHEN Siyu	2466
Trigger Criterion for Emergency Adjustment in Distribution Network Repair under Sudden Risks .....	WANG Xinming, CAI Sheng, XIE Yunyun, YU Chen, CHANG Kang	2472
A High Step-up Common Ground Thirteen-Level Switched-Capacitor Inverter with Reduced Components Count .....	LI Yicong, YAO Jia	2478
A Study on Fuzzy Sliding Mode Control of PMSM Based on Fractional-Order Extended State Observer .....	WANG Fangchao, BAOLONG Chen, WANG Haocheng, ZHANG Yu	2485
A PCB SMD Solder Quality Inspection Method Based on Dual-Path Region Segmentation and Color Clustering .....	CHENG Yang, YU Jinyong, LIU Weihua	2491
A Lightweight Transformer for PCB Defects Detection .....	NIU YUANCHEN, WANG Rui, LI Peng, ZHANG Yangkun	2497
Quality Prediction in Multi-Stage Manufacturing with Hybrid TCN-Transformer .....	SIWEI Peng, WANG Rui, LI Peng, ZHANG Yangkun	2502
Research and Application of Software Reuse Technology in Satellite Control System .....	HUA Gengpai, GONG Cheng, YONG Huang	2507
Subpixel Measurement Method for Surface Mount Devices Based on Edge Tracing .....	LIU Weihua, LIU Yi Peng, HAN Chungang	2510
Finite-time Stabilization for a Chaos Wave Equation with Disturbance .....	LOU MengYuan, ZHOU Hua-Cheng	2515
IPSO-based Charging Price Optimization for Charging Stations with Cooperative and Competitive Relationship .....	WANG Min, ZOU Haoxiang, QIU Yong, HUANG Qilong	2521
A Hybrid-Modulated Switched-Capacitor Multilevel Inverter with ZVS for Reduced Switching Losses .....	LIU Ankai, YAO Jia	2527
Active Power Optimization Dispatch Strategy of Wind Farm Considering Maximum Reactive Power Support Capability .....	WANG Xiaoya, JU Jin, XU Chang	2534
Small-Signal Stability Analysis and Parameter Optimization of Grid-Forming Wind Turbine .....	SUN Boyang, WANG Xiaoya, LIU Kunlong	2540
Damping Control of Offshore Wind Power Grid-forming Flexible HVDC Grid-connected System Considering the Influence of Measurement Delay .....	JU Jin, SUN Boyang, LIU Kunlong	2546
Power System Region Partition Method with High-Penetration of Renewable Energy Considering Frequency Temporal-spatial Distribution Characteristics .....	ZHOU Tao, WU Jian, QIAO Yong, DAI Meng, GU Wenke, CHEN Zhong	2552
Synthetic Inertial Control for Fast Frequency Response of Photovoltaic Power Generation Based on Load Shedding .....	ZHOU Tao, WANG Yulu, NI Jun, XU Chao, XU Yan	2559
Position Control of Maglev Permanent Magnet Linear Motor Based on Adaptive Fast Terminal Sliding Mode .....	ZHANG Long, YAN Jianhu, WANG Yixing	2564
Motion Control of Complex Gantry Dual-Drive Platform Based on Fully Actuated System Theory .....	FAN Hao, WEI Guangyu, GU Chaochen	2570
Inverter Impedance Modelling and Stability Analysis Based on Virtual Synchronous Generator Control .....	ZHANG Ruitong, WANG Puyu, SUN Dengpan, HU Linpei	2576

Analysis of Short Circuit Ratio Stability Domain of Direct-Drive Wind Farm with Hybrid-Synchronous Control under Different Input Proportional Coefficients ..... HU Linpei, WANG Puyu, WANG Xin, FU Shijie, ZHANG Ruitong 2581

Small-signal Modelling of Hybrid Bipolar HVDC Transmission Systems ..... SHENG Yu, WANG Puyu, ZHU Yanyu, SUN Dengpan, WU Bin 2586

Active Support Performance Analysis of Photovoltaic Inverter Based on DC Voltage Inertia Control ..... TANG Xujie, WANG Puyu, SUN Dengpan, LI Tianwei, SHENG Yu 2591

Interaction of Active Power Control Channels in a PMSG Grid-Integrated System Based on Grid-Forming Control ..... WANG Xin, WANG Puyu, GU Tianming, HU Linpei, SHENG Yu 2597

Research on AVC Performance Assessment of Power Grid under High Renewable Penetration ..... ZHU Zhaiqi, XIE Yunyun, CAI Sheng, ZHANG Yuping, ZHU Dandan, ZHOU Qian 2602

Operational Dispatch Strategy for Multi-energy Microgrid Considering Pulsed Load Characteristics ..... ZHANG Jia Hao, CAI Sheng, WANG Xudong, SU Xing, XIE Yunyun 2608

考虑电流限幅的构网型变流器直流侧电压控制策略研究 ..... XU Yiyang, ZHAO Zhihong, CHEN Siyu, DONG Liang 2614

A Flexible Job Shop Scheduling Method via a Hybrid Dual Attention Network and Mamba Approach ..... LI Chenmeng, ZHAO Xuhui, FENG Jiamei, YANG Meiyi, WANG Xinlu, GAO Huimin, ZHANG Mingchuan 2620

Design and Implementation of Oilfield Wireless Data Manager ..... ZHANG WenDian 2626

Biometric-based Lightweight V2I Authentication and Key Exchange Protocol ..... WANG Hexiang, ZHANG Moli, HAN Beibei, MUHUA Liu, LI Dongwei 2632

Graph-text Adversarial Distillation Model for Document-level Joint Relation Extraction ..... LI Wenbo, WANG XiaoLong, SHEN WeiYu, FENG Jiamei, YANG Meiyi 2638

Research on Workshop Layout Based on Hybrid Optimization of Sparrow Algorithm and Hippo Optimization Algorithm .. QIN JieFei, WANG Lin, ZHAO Xuhui, FENG Wang, MUHUA Liu, JI Zhihang 2644

Flexible Formation and Obstacle Avoidance for Multi-UAV System via Nutcracker Optimization and Trajectory Control ..... LIU Zhihao, LI Peng, ZHANG Yangkun 2650

Optimal Allocation of Fully Actuated Energy Systems in Gas-to-methanol Processes ..... WANG Xueting, WEI Mengyao, WANG Jiandong 2656

Analysis of Evolutionary Game Dynamics with Both Ally and Enemy Strategies ..... CHEN Kefei, LIU Qingsong 2662

A Multimodal Optimal Control Approach for Fast Obstacle Avoidance of UAVs ..... MINGHAO Lu 2668

Research on Seat Optimization Strategy and Passenger Choice Behavior of High-speed Rail Operators Based on Evolutionary Game Theory ..... LI Xingzhao, PAN Jiaqi 2673

Distributed Optimal Control of Large-scale Higher-order Fully Actuated Systems ..... DING Ziming, WANG Yan 2679

Nash Equilibrium Seeking for Networked Marine Surface Vehicles Based on Fully Actuated System Approach ..... LI Yi-Fan, LIU Zhi-Wei, GE Ming-Feng 2685

Predictive Control for Networked Buck Converter Systems with Time Delays Based on Fully Actuated System Theory ..... DAI Xiaoran, LIU Guoping, LEI Zhongcheng, HU Wenshan, ZHOU Hong, ZHANG Jun 2690

《Distributed Drive Electric Vehicles Lateral Stability Strategy》 ..... LIU Yuexi, SU Che, YUEHENG Ding, DEZHI Xu, WEI Hua, YU Wenfei 2695

Modeling Predictive Control for the LCL Grid-connected Inverter Fully- Actuated System ..... ZHAO Yanyu, ZHENG Xuemei, ZHANG Xingyu 2700

Predictive Observer-Compensated High-Order Fully Actuated Tracking Control for Linear Switched Reluctance Machine .....	LIU Yiyang, MA Yiting, CHEN Shishuo, WANG Yucheng, SONG Chenmei, QIU Li, DENG Feiqi	2706
High-Order Fully Actuated System Approaches: Trajectory Tracking of AGVs Based on Model Predictive Control .....	CAO Tailai, ZHANG Zhaoming, YANG Ziwen, ZHU Shanying	2712
Predictive Control of Underdriven Gantry Cranes Based on High-order Fully Actuated System .....	HENG Zhang, DING Weili, HUA Changchun, LU Biao	2718
A Network Communication Time Delay Compensation Strategy Based on High Order Predictive Control .....	ZHOU Yi, DING Jiali, XIE Xuhuan, LIU Hao, HUANG Zixin	2724
Predictive Control for A Type of UASs with Unmatched Disturbances Based on FAS Approaches .....	WANG Xiubo, XU Lixue	2729
Research on Chance-Constrained Robust MPC Method for Rendezvous with Space Tumbling Targets .....	WANG Mingliang, DONG Kaikai, ZHANG Yuxi	2735
Disturbance Rejection Control of Flying Rifle Based on Adaptive Prescribed Performance .....	ZHANG Chichen, WANG Jun, CAO Fan, BO Yuming	2741
Prescribed Performance-Based Recoil Compensation Control for Flying Rifle Systems .....	CAO Fan, WANG Jun, ZHANG Chichen	2747
Intersection-Level Turning Movement Flow Prediction Using an Adaptive Spatiotemporal Feature Fusion Network .....	LI Shuangshuang, GONG Yancheng, LIU Chunhao, LIU Zhaodong, PAN Guangyuan	2752
Manipulability-Guided MPC with Repulsive Potential Fields for Mobile Manipulator Whole-Body Control .....	ZHANG Jinlong, SHAN Liang, MA Enhui, CHEN Piaoyang, WANG Weixi	2758
Data Fusion Algorithm for Redundant Gyroscope System Based on Differential Layout Array .....	LU Jixiang, XUE Liang, CAI Guang-Bin, HE Guoyuan	2764
Zero-Velocity Detection Algorithm for Inertial Pedestrian Navigation Based on PSO-DBSCAN Clustering .....	AN Yuxing, ZHOU Lingke, LI Sheng	2770
Emergency Return Method of Lunar Rover Based on Rut Tracking .....	ZHENG Bo, HU Tao, HUANG Fei, QIAN Zhouyuan, ZHANG Hanmo, CAO Tao	2776
A System Ensuring the Effectiveness of Lunar Rover in Highly Bumpy Environments .....	HU Tao, ZHENG Bo, HUANG Fei, QIAN Zhouyuan, ZHANG Hanmo, CAO Tao, HE Liang	2781
Analytical Trajectory Prediction for Intercepting Aerial Vehicles Using Proportional Navigation Guidance Law .....	ZHAO Xin, WANG Jiang, WANG Yaning, LIU Zichao, LI Hongyan, WANG Yinhan	2787
Adaptive Second-Order Disturbance Observer-Based 3D Integrated Guidance and Control Design Using Fully Actuated System Approach .....	ZHANG Hongyan, WANG Wei, CHEN Shiwei	2793
Adaptive Sliding Mode Guidance Law with Three-Dimensional Terminal Line-of-Sight Angle Constraint .....	JI Yuguang, JI Yi, FAN Jun-fang, LI Yafeng, ZHANG Sixing	2799
Three Dimensional Adaptive Sliding Mode Guidance Law Based on Finite Time Prescribed Performance .....	WANG Hongyu, JI Yi, FAN Jun-fang	2805
Satellite Integrated Navigation Algorithm Based on AREKF .....	YU Hao, GONG Cheng, LIU Chunyang, YONG Huang, ZHANG Wenjing	2810
轻量化地图引导的三维实时路径规划方法研究 .....	GU Chengyu, XU Xiaobin, FAN Jun-fang, GAO Zhihao	2815
A Deep Reinforcement Learning-Based Multi-UAV Global Path Planning .....	LI Xinru, WANG Xu, FAN Jun-fang, ZHANG Sixing, LI Qianqian	2820
An Adaptive Proportional Navigation Algorithm Based on BADS under Solar Illumination Constraint .....	GAO Changhao, LI Xingxiu, ZHANG Chaojie, HE Shan, WU Panlong	2826

Research on Path Planning for Mobile Robots Based on Optimized Ant Colony Algorithm  
 ..... TIAN Qingchao, MA Qian, JIN Peng 2832

D\_ORB: A Robust Visual SLAM System Based on Deep Feature Extraction  
 ..... XZIJIE Xie, MA Qian, JIN Peng 2838

Repetitive Locking Control and Mechanical Characteristics Analysis of High-speed Magnetically Sus-  
 pended Rotor ..... LV Qichao, NI Fei, LV Dong Yuan, HUANG XiaoGuang, XI Chen 2844

Review and Frontier Exploration of Active SLAM  
 ..... DU Shoudu, LI Hongru, YANG Xuefei, GONG Xin 2850

Research on Key-point Detection of Space Target Based on Lightweight-HRNet ..... FU Jun 2856

Free Final-Time Trajectory Optimization for Ramjet Mode of ATR Aircraft by Successive Difference-of-  
 Convex Programming ..... DENG Zexiao, WANG Yan, LIU Luhua 2862

A Cooperative Guidance Method Based on Trust Region Strategy Optimization Learning under Terminal  
 Impact Angle Constraint ..... LAN Ge, BAN Xiao Jun 2868

Group Target Fine Tracking Algorithm Based on Velocity Correction via Collaborative Relationships  
 ..... KE Shuai, QI Guoqing, LI Yinya, SHENG Andong 2874

Finite-Time Pth Moment Stability of Switched Stochastic Time-Varying Systems  
 ..... FU Wenbo, LUO Weiwei, ZHU Song, HONGRU Li 2880

State Estimation and Trajectory Prediction of Near Space Hypersonic Vehicles  
 ..... WANG Congrao, YAN Bowei, BAN Xiao Jun, ZHOU Di 2885

Trigonometric-Type Sliding Mode Attitude Control for Rigid Spacecraft with Arbitrary Convergence  
 Time ..... XU Yu-Tian, WU Ai-Guo 2891

Online Allan Variance Noise Coefficient Estimation Method Based on Iterative Least Squares  
 ..... WU Zhangyi, SUN Yuanyuan, ZHANG Bo, XU Xiang 2896

Variational Bayesian Kalman Filtering Algorithm for GPS/INS Integrated Navigation System  
 ..... WANG Yiren, SUN Yuanyuan, WU Zhangyi, XU Xiang 2902

可堆叠串链式太阳帆姿轨控制策略研究 ..... WU Yunli 2909