

# 控制理论与应用

第39卷 第1期 2022年1月

## 目 次

### 论文与报告

- 基于群集行为的分布式多无人机编队动态避障控制 ..... 费思远, 鲜斌, 王岭 (1)  
独立驱动的仿鸟扑翼飞行机器人的系统设计与实验 ..... 贺威, 刘上平, 黄海丰, 付强, 孙长银 (12)  
基于滑动窗实时小波降噪的扩张状态观测器及自抗扰控制 ..... 秦华阳, 陈增强, 孙明玮, 孙青林 (23)  
改进的基于分解的多目标进化算法求解双目标模糊柔性作业车间调度问题 ..... 李瑞, 龚文引 (31)  
基于仿射Bessel-Legendre不等式和不确定转移率的神经网络稳定性  
..... 王军义, 张文涛, 刘振伟, 姜杨 (41)  
空地异构机器人系统协作巡逻路径规划方法 ..... 胡子峰, 陈洋, 郑秀娟, 吴怀宇 (48)  
分布式随机离散事件系统的模式故障预测 ..... 金衍伟, 刘富春, 赵锐, 曹卫华, 崔洪刚 (59)  
密度敏感模糊核最大熵聚类算法 ..... 李烨桐, 郭洁, 祁霖, 刘璇, 阮鹏宇, 陶新民 (67)  
具有时滞脉冲的线性随机时滞系统的均方指数稳定 ..... 崔瑶, 程培, 蔡婷 (83)  
多阶段间歇过程鲁棒模糊预测异步切换控制 ..... 彭博, 施惠元, 苏成利, 李平 (91)  
环卫车辆轨迹跟踪系统的无模型自适应迭代学习控制 ..... 姚文龙, 庞震, 池荣虎, 邵巍 (101)  
基于深度学习与混沌特征融合的滚动轴承故障诊断  
..... 金江涛, 许子非, 李春, 缪维跑, 肖俊青, 孙康 (109)  
配置弹簧阻尼装置空间机器人双臂捕获卫星操作缓冲柔顺控制 ..... 朱安, 陈力 (117)  
基于低差异序列与快速扩展随机树融合算法的机械臂路径规划 ..... 代伟, 李创业, 杨春雨, 马小平 (130)  
具有时变通信受限非线性信息物理系统的网络化预测控制 ..... 刘国平 (145)  
基于强化学习的一类具有输入约束非线性系统最优控制 ..... 罗傲, 肖文彬, 周琪, 鲁仁全 (154)  
PMSM伺服系统线性自抗扰控制器的参数整定 ..... 许文波, 魏泽宇, 孔伟, 潘龙, 刘伟奇 (165)

### 短文

- 随机开放量子系统的纯态开关反馈控制 ..... 董智翔, 丛爽 (179)  
工业有机污染物治理过程的多目标优化控制(英文)  
..... 高世达, 薄翠梅, 李俊, 陈宇鑫, 崔世宇, 乔旭 (187)

\* \* \* \*

- 《控制理论与应用》征稿简则 ..... (200)

# CONTROL THEORY & APPLICATIONS

Vol. 39 No. 1 Jan. 2022

## CONTENTS

### Papers and Reports

Distributed formation control for multiple unmanned aerial vehicles with dynamic obstacle avoidance based on the flocking behavior .....	FEI Si-yuan, XIAN Bin, WANG Ling (1)
System design and experiment of an independently driven bird-like flapping-wing robot .....	HE Wei, LIU Shang-ping, HUANG Hai-feng, FU Qiang, SUN Chang-yin (12)
Extended state observer based on sliding window real-time wavelet denoising and active disturbance rejection control .....	QIN Hua-yang, CHEN Zeng-qiang, SUN Ming-wei, SUN Qing-lin (23)
An improved multi-objective evolutionary algorithm based on decomposition for bi-objective fuzzy flexible job-shop scheduling problem .....	LI Rui, GONG Wen-yin (31)
Stability for neural networks based on affine Bessel-Legendre inequality and uncertain transition rates .....	WANG Jun-yi, ZHANG Wen-tao, LIU Zhen-wei, JIANG Yang (41)
Cooperative patrol path planning method for air-ground heterogeneous robot system .....	HU Zi-feng, CHEN Yang, ZHENG Xiu-juan, WU Huai-yu (48)
Coprognoability of pattern fault for decentralized stochastic discrete event systems .....	JIN Yan-wei, LIU Fu-chun, ZHAO Rui, CAO Wei-hua, CUI Hong-gang (59)
Density-sensitive fuzzy kernel maximum entropy clustering algorithm .....	LI Ye-tong, GUO Jie, QI Lin, LIU Xuan, RUAN Peng-yu, TAO Xin-min (67)
Mean square exponential stability of linear stochastic delay systems with delayed impulses .....	CUI Yao, CHENG Pei, CAI Ting (83)
Robust fuzzy predictive asynchronous switching control for multi-phase batch processes .....	PENG Bo, SHI Hui-yuan, SU Cheng-li, LI Ping (91)
Track tracking control of sanitation vehicle based on model-free adaptive iterative learning control .....	YAO Wen-long, PANG Zhen, CHI Rong-hu, SHAO Wei (101)
Rolling bearing fault diagnosis based on deep learning and chaotic feature fusion .....	JIN Jiang-tao, XU Zi-fei, LI Chun, MIAO Wei-pao, XIAO Jun-qing, SUN Kang (109)
Buffer and compliance control of dual-arm space robot capture satellite operation with spring-damper device .....	ZHU An, CHEN Li (117)
Manipulator path planning using fusion algorithm of low difference sequence and rapidly exploring random tree .....	DAI Wei, LI Chuang-ye, YANG Chun-yu, MA Xiao-ping (130)
Networked predictive control of nonlinear cyber physical systems with time-varying communication constraints .....	LIU Guo-ping (145)
Optimal control for a class of nonlinear systems with input constraints based on reinforcement learning .....	LUO Ao, XIAO Wen-bin, ZHOU Qi, LU Ren-quan (154)
Parameters tuning of linear active disturbance rejection controller for PMSM servo system .....	XU Wen-bo, WEI Ze-yu, KONG Wei, PAN Long, LIU Wei-qi (165)

### Brief Papers

Pure state switching feedback control for stochastic open quantum systems .....	DONG Zhi-xiang, CONG Shuang (179)
Multi-objective optimization control of industrial organic pollutants treatment process .....	GAO Shi-da, BO Cui-mei, LI Jun, CHEN Yu-xin, CUI Shi-yu, QIAO Xu (187)