

ISSN 1000-8152  
CODEN KLYYEB



# 控制理论 与应用

Control Theory & Applications

第30卷 第1期 2013年1月

Vol. 30 No. 1 Jan. 2013

华南理工大学  
中国科学院数学与系统科学研究院

主办

# CONTROL THEORY & APPLICATIONS

Vol. 30 No. 1 Jan. 2013

## CONTENTS

### Papers and Reports

- Static var-compensator nonlinear robust adaptive control method based on system immersion and manifold invariant methodology ..... ZHANG Lei, ZHANG Ai-min, HAN Jiu-qiang, ZHANG Hang (1)
- Selection of knowledge mesh based on fuzzy relational clustering ..... YANG Ren-zi, YAN Hong-sen (8)
- Multi-objective particle swarm optimization algorithm for cross-training programming ..... LI Qian, GONG Jun, TANG Jia-fu (17)
- Error trajectory tracking by robust learning control for nonlinear systems ..... YAN Qiu-zhen, SUN Ming-xuan (23)
- Optimization of vertical profile trajectory for unmanned aerial vehicle ..... CHEN Xiao, WANG Xin-min, ZHOU Jian (31)
- Chainlike multi-population multi-agent evolutionary algorithm ..... WU Ya-li, JIN Xiao-qi, LIU Ge (37)
- Pitch control for flight in heavy-weight airdrop based on feedback linearization theory and variable-structure control ..... LI Da-dong, SUN Xiu-xia, DONG Wen-han, XU Guang-zhi (54)
- Synchronization analysis of delayed hybrid dynamical networks with quantized impulsive effects ..... YE Qian, ZHU Hui-bin, CUI Bao-tong (61)
- Adaptive robust control for the space application of manipulator aligned on ground ..... LIU Fu-cai, GAO Juan-juan, WANG Fang (69)
- Reliable D-stabilization for time-delay systems of Delta operator ..... XIAO Min-qing, SU Hong-ye, XU Wei-hua (77)
- Global exponential sets of Panchev system and its application ..... WEI Zhou-chao (84)
- Coordinated control of steering and driving in off-road intelligent vehicle ..... LI Lin-hui, GUO Jing-hua, ZHANG Ming-heng, LIAN Jing (89)

### Brief Papers

- Fragility analysis for control systems ..... HE Zhen, WANG Guang-xiong, ZHANG Jing, QI Jian-cheng, ZHOU Di (95)
- Approximate-model-based decoupling controller for electric arc furnace ..... LI Lei, MAO Zhi-zhong (101)
- Improved Smith predictive compensation and decoupling in refrigeration system ..... LI Zhao-bo, WU Ai-guo, HE Yi, ZHAI Wen-peng (111)
- Altitude information fusion and bottom-following control for underactuated autonomous underwater vehicle ..... LI Yue-ming, WAN Lei, SUN Yu-shan, ZHANG Guo-cheng (118)
- Nonlinear quasi-sliding-mode robust control for discrete-time systems with time-delay ..... GAO Cun-chen, LIU Zhen, REN Qi-feng (123)
- Adaptive sliding-mode passive observer design for dynamic positioning vessel ..... XIE Wen-bo, FU Ming-yu, SHI Xiao-cheng (131)

# 控制理论与应用

第30卷 第1期 2013年1月

## 目 次

### 论文与报告

基于系统浸入和流形不变自适应方法的静止无功补偿器非线性鲁棒自适应控制方法

- ..... 张 蕾, 张爱民, 韩九强, 张 杭(1)  
基于模糊关联聚类的知识网选择方法 ..... 杨人子, 严洪森(8)  
多目标粒子群算法在交叉培训规划中的应用 ..... 李 倩, 宫 俊, 唐加福(17)  
一类非线性系统的误差轨迹跟踪鲁棒学习控制算法 ..... 严求真, 孙明轩(23)  
无人飞行器纵向剖面轨迹优化 ..... 陈 晓, 王新民, 周 健(31)  
链式多种群多智能体进化算法 ..... 吴亚丽, 靳笑一, 刘 格(37)  
基于线性化反馈的滑模变结构重装空投纵向控制律设计 ..... 李大东, 孙秀霞, 董文瀚, 徐光智(54)  
具有量化脉冲效应的时滞混杂动态网络同步分析 ..... 叶 倩, 朱会宾, 崔宝同(61)  
地面装调的空间机械臂在空间应用时的自适应鲁棒控制 ..... 刘福才, 高娟娟, 王 芳(69)  
Delta算子时滞系统的可靠D-镇定 ..... 肖民卿, 苏宏业, 徐巍华(77)  
Panchev系统的全局指数吸引集及其应用 ..... 魏周超(84)  
越野智能车转向及驱动协调控制 ..... 李琳辉, 郭景华, 张明恒, 连 静(89)

### 短 文

- 控制系统的脆弱性分析 ..... 何 聰, 王广雄, 张 静, 戚建成, 周 荻(95)  
基于近似模型的电弧炉解耦控制器 ..... 李 磊, 毛志忠(101)  
制冷系统的改进Smith预估补偿和解耦控制 ..... 李兆博, 吴爱国, 何 熿, 翟文鹏(111)  
水下机器人高度信息融合与欠驱动地形跟踪控制 ..... 李岳明, 万 磊, 孙玉山, 张国成(118)  
时滞离散时间系统的非线性准滑模鲁棒控制 ..... 高存臣, 刘 振, 任启峰(123)  
动力定位船舶自适应滑模无源观测器设计 ..... 谢文博, 付明玉, 施小成(131)