

勤数
笃系
求真
地中国科学院数学与系统科学研究院
Academy of Mathematics and Systems Science
Chinese Academy of Sciences[首页](#) [单位概况](#) [组织机构](#) [研究队伍](#) [科研成果](#) [教育培养](#) [党群文化](#) [人与事](#) [期刊学会](#) [图书馆](#) [信息公开](#)[新闻动态](#)

- [科研进展](#)
- [综合新闻](#)
- [传媒扫描](#)

现在位置: [首页](#) > [新闻动态](#) > [科研进展](#)

非线性不确定多输入多输出系统的有限时间镇定 (郭宝珠)

2023-12-13

The finite-time stabilization problem is considered for a class of multi-input multi-output nonlinear systems composed of several different subsystems that are coupled with unknown nonlinearities, possibly superlinear and nonvanishing at the origin. A novel decentralized, continuous finite-time output-feedback control algorithm is presented by dynamically compensating the unknown nonlinear couplings and applying a saturation technique. A crucial strategy is to estimate the uncertain nonlinearities and the unmeasured state by means of a finite-time extended state observer. The effectiveness of the proposed decentralized finite-time output-feedback design is validated by rigorous mathematical analysis and numerical simulations.

Publication:

SIAM Journal on Control and Optimization, Volume 61, Issue 4 (2023)

<http://dx.doi.org/10.1137/22M1496086>

Author:

Zhi-Liang Zhao

School of Mathematics and Statistics, Shaanxi Normal University, Xi'an 710119, People's Republic of China.

Ruonan Yuan

School of Mathematics and Statistics, Shaanxi Normal University, Xi'an 710119, People's Republic of China.

Bao-Zhu Guo

Academy of Mathematics and Systems Science, Academia Sinica, Beijing 100190, People's Republic of China.

Email: bzguo@iss.ac.cn

Zhong-ping Jiang

Department of Electrical and Computer Engineering, Tandon School of Engineering, New York University, New York, NY 11201 USA.

[【打印本页】](#) [【关闭本页】](#)[电子政务平台](#) | [科技网邮箱](#) | [ARP系统](#) | [会议服务平台](#) | [联系我们](#) | [友情链接](#)版权所有 © 中国科学院数学与系统科学研究院 备案号: 京ICP备05002806-1号 京公网安备110402500020号
电话: 86-10-82541777 传真: 86-10-82541972 Email: contact@amss.ac.cn
地址: 北京市海淀区中关村东路55号 邮政编码: 100190