

短文

一类非线性相似组合系统的鲁棒分散控制器的设计

陈兵,井元伟,张嗣瀛

东北大学信息科学与工程学院135信箱,沈阳

收稿日期 1997-3-31 修回日期 网络版发布日期 接受日期

摘要

对于一类非线性组合系统提出了系统的相似性结构的定义,讨论了这类具有相似性结构的非线性结构不确定组合系统的鲁棒分散镇定问题.利用系统的相似性结构,采用输入、输出线性化与滑模控制原理相结合的方法所设计出的鲁棒分散控制器可确保闭环系统是渐近稳定的.研究表明系统的相似性结构使设计的滑动面和分散控制器亦具有相似结构,从而简化了对系统的分析与设计.

关键词 [相似性结构](#) [鲁棒分散镇定](#) [非线性组合大系统](#)

分类号

Design of Decentralized Robust Controller For A Class of Nonlinear Composite Systems With Similarity

CHEN Bing, JING Yuanwei, ZHANG Siying

School of Information Science and Engineering, Northeastern University, Shenyang

Abstract

In this paper, the similar structure is defined for a class of nonlinear composite systems, and the decentralized robust stabilization is discussed for a class of nonlinear uncertain composite systems with similar structure. By using the similar structure of system and the input-output linearizing method together with sliding mode control theory, robust decentralized controllers are designed to guarantee the closed-loop systems is asymptotically stable. Our researching result shows that the sliding model and decentralized controller designed in this paper also have similarity because of the similar structure of the composite systems. This can simplify the analysis and design of systems.

Key words [Similar structure](#) [robust stabilization](#) [nonlinear composite systems](#)

DOI:

通讯作者

作者个人主页 陈兵;井元伟;张嗣瀛

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF \(298KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献\[PDF\]](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“相似性结构”的 相关文章](#)
- ▶ 本文作者相关文章
- [陈兵](#)
- [井元伟](#)
- [张嗣瀛](#)