

[短文](#)[最新目录](#) | [下期目录](#) | [过刊浏览](#) | [高级检索](#)

[an error occurred while processing this directive]][an error occurred while processing this directive]

基于坐标变换的径向主动磁悬浮轴承容错控制

崔东辉,徐龙祥

南京航空航天大学

Fault tolerant control of radial active magnetic bearing based on coordinate transformation

[摘要](#)[图/表](#)[参考文献\(0\)](#)[相关文章\(15\)](#)全文: [PDF](#) (689 KB) [HTML](#) (1 KB)输出: [BibTeX](#) | [EndNote \(RIS\)](#) [背景资料](#)

摘要

针对安装3个位移传感器的六极径向主动磁轴承,研究了基于坐标变换的位移传感器容错控制算法;在电流分配矩阵重构法的基础上,提出了基于坐标变换的执行器容错控制算法;并将这两种算法结合,提出了基于坐标变换的位移传感器和执行器容错控制算法;最后,在一个两自由度径向主动磁轴承实验台上对该容错控制算法进行了实验研究。实验结果表明,采用新容错控制算法可以最多在1个传感器故障和3个励磁线圈同时故障的情况下实现转子的稳定悬浮。

关键词 : 径向主动磁轴承, 容错控制, 坐标变换

Abstract :

The fault tolerant control method of displacement sensor based on coordinate transformation is studied according to a six-core radial active magnetic bearing equipped with three displacement sensors. The coordinate transformation-based actuator fault tolerant control method on the basis of current distribution matrix reconstruction is presented. The combination of these two methods derives a new fault tolerant control method of displacement sensors and actuator based on coordinate transformation. Experimental study on the new fault tolerant control method is done with a two degree of freedom active magnetic bearing test rig. The results show that the stable suspension of rotor can be achieved by using the new control method even if one displacement sensor and three coils fail at the same time.

Key words : Radial active magnetic bearing Fault tolerant control Coordinate transformation

收稿日期: 2009-08-17 出版日期: 2010-09-10

通讯作者: 崔东辉 E-mail: cdhui_nuaa@nuaa.edu.cn

引用本文:

崔东辉,徐龙祥. 基于坐标变换的径向主动磁悬浮轴承容错控制[J]. 控制与决策, 2010, 25(9): 1420-1425.

链接本文:

<http://www.kzyjc.net:8080/CN/> 或 <http://www.kzyjc.net:8080/CN/Y2010/V25/I9/1420>

服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

作者相关文章

- ▶ 崔东辉
- ▶ 徐龙祥

版权所有 © 《控制与决策》编辑部

本系统由北京玛格泰克科技发展有限公司设计开发 技术支持: support@magtech.com.cn 51La