



Mecanum轮全方位运动系统的约束条件及奇异位形

王一治¹, 常德功^{1, 2}

(1.上海大学 机电工程与自动化学院, 上海 200072; 2.青岛科技大学 机械工程学院, 山东 青岛 266042)

Motion Restricted Condition and Singular Configuration for Mecanum -Wheeled Omni-Directional Motion System

WANG Yi-zhi¹, CHANG De-gong^{1, 2}

(1. School of Mechatronics Engineering and Automation, Shanghai University, Shanghai 200072, China; 2. College of Mechanical Engineering, Qingdao University of Science and Technology, Qingdao 266042, Shandong, China)

- [摘要](#)
- [参考文献](#)
- [相关文章](#)

Download: [PDF \(578KB\)](#) | [HTML \(1KB\)](#) | Export: [BibTeX](#) or [EndNote \(RIS\)](#) | [Supporting Info](#)

摘要

通过对Mecanum轮全方位运动系统的运动学解析, 给出系统轮结构对系统实现全方位运动的约束条件. 约束条件包括轮数量、轮结构参数、轮组几何布局结构形式与系统实现全方位运动的关系等, 同时分两类轮组布局结构形式讨论系统中存在的奇异位形, 并给出减少或避开系统奇异位形的方法.

关键词: Mecanum轮; 全方位运动; 运动约束条件; 奇异位形

Abstract:

Though kinematics analyzing for Mecanum wheeled omni-directional motion system, the restricted conditions of the system to move in omni directions are presented. These conditions include relationships of the wheel structure, wheels number and the system lay-out to system to move in omni-direction. The singular configuration of the system is showed out from two class system layouts, it is presented that how to decrease or avoid the singular configuration of the system to move in omni directions.

Keywords: Mecanum wheel; omni-directional motion; motion restricted condition; singular configuration

收稿日期: 2007-10-12; 出版日期: 2009-04-21

通讯作者 王一治(1966~), 男, 高级工程师, 博士, 研究方向为机器人技术、智能机械系统. Email: wyz@shu.edu.cn

作者简介: 王一治(1966~), 男, 高级工程师, 博士, 研究方向为机器人技术、智能机械系统.

引用本文:

王一治, 常德功. Mecanum轮全方位运动系统的约束条件及奇异位形[J] 上海大学学报(自然科学版), 2009, V15(2): 181-185

WANG Yi-Zhi, CHANG De-Gong. Motion Restricted Condition and Singular Configuration for Mecanum -Wheeled Omni-Directional Motion System [J] J. Shanghai University (Natural Science Edition), 2009, V15(2): 181-185

链接本文:

<http://www.journal.shu.edu.cn/CN/> 或 <http://www.journal.shu.edu.cn/CN/Y2009/V15/I2/181>

没有本文参考文献

没有找到本文相关文献

Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

作者相关文章

- ▶ [王一治](#)
- ▶ [常德功](#)

