MIMO系统求逆的Interactor算法改进

胡立坤[1,2],王庆超[2]

1.广西大学 电气工程学院,南宁 530004; 2.哈尔滨工业大学 航天学院, 哈尔滨 150001

摘要 针对多输入多输出系统求逆的Interactor算法出现异常中断和不能给出构造性逆的问题,
提出了在实施Interactor算法之前对输出交换输出次序、在算法过程中若出现异常时采用恢复方法、间接求逆、
引入控制输入动态的改进策略,
为提高可逆性的判定功效和实现逆系统的完全解析构造提供了有效的方法。算例和仿真说明了改进的Interactor算法的有效性。
关键词 自动控制技术,多输入多输出系统,逆系统方法,Interactor算法
分类号 TP13

Modification of Interactor algorithm in the inverse of MIMO system

HU Li-kun[1,2], WANG Qing-chao[2]

1.College of Electrical Engineering, Guangxi University, Nanning 530004, China; 2.School of Astronautics, Harbin Institute of Technology, Harbin 150001, China

Abstract The Interactor algorithm for the construction of inverse of multi input multi output (MIMO) nonlinear systems was modified for the proplems that the abnormal interrupt and no constructive inverse would happen. In the modification, output permutation before the algorithm execution, retrieval from abnormal abortion, indirect inverse solution, and introduction of improvement strategy in control dynamics were used. The propose modification can provide an effective method for reversibility judgment and the completely analytical inverse construction. Examples and simulations were given to demonstrate validity of the peoposed modified Interactor algorithm.

Key words automatic control technology multi-input multi-output systems inverse system method Interactor algorithm

DOI:

通讯作者 王庆超 wangqingchao@hit.edu.cn