

短文

时变修正因子二级自寻优模糊控制器

胡劲松,郑启伦,吴捷

华南理工大学计算机系,广州

收稿日期 2000-10-31 修回日期 网络版发布日期 接受日期

摘要

首先给出一种实时性好精度高的局部连续模糊算法,并与已有的方法相结合,构造了一个时变修正因子的模糊控制器;其次给出了一种可快速精确逼近最优解的模拟退火算法,融合这两种方法构成了自寻优模糊控制器.仿真结果表明这种自寻优控制器对大时滞对象,非线性不稳定且模型未知对象都有良好的控制效果.该方法最大的优点是无需对象的数学模型和人的经验,这为非线性模型不确定且不稳定对象的最优控制提供了一条途径.

关键词 [模糊控制](#) [局部连续模糊算法](#) [模拟退火](#) [非线性](#)

分类号 [TP273](#)

Factor Two Level Self-Optimizing Fuzzy Controller with Time-Varying Modifying

HU Jing-Song, Zhen Qi-Lun, Wu Jie

Computer Engineering and Science Department, South China University of Technology, Guangzhou

Abstract

The paper proposes a partly continuous fuzzy algorithm that is combined with the existing method to improve the real time ability and the precision of fuzzy controller obviously. A time-varying modifying factor fuzzy controller is constructed by the method. Then a novel simulated annealing algorithm is presented to rapidly achieve the optimal result. The self-optimizing fuzzy controller is made of the two algorithms. The simulation results illustrate that the self-optimizing fuzzy controller has fine performances for dead-time plants and non-stable nonlinear plants whose mathematical models are not known. It is the main advantage that the self-optimizing fuzzy controller is independent of human experience and the mathematical models of plants. The paper tries to provide a way for controlling non-linear plants of unknown mathematical models.

Key words [Fuzzy control](#) [partly continuous fuzzy algorithm](#) [simulated annealing](#) [nonlinear](#)

DOI:

通讯作者 胡劲松

作者个人主页 [胡劲松;郑启伦;吴捷](#)

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(424KB\)](#)
- ▶ [\[HTML全文\]\(OKB\)](#)
- ▶ [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“模糊控制”的相关文章](#)
- ▶ 本文作者相关文章
 - [胡劲松](#)
 - [郑启伦](#)
 - [吴捷](#)