

短文

动力锅炉燃烧系统的模糊控制策略

刘向杰,柴天佑,刘红波

电力部电力科学研究院,北京;东北大学自动化研究中心,沈阳

收稿日期 1996-9-17 修回日期 网络版发布日期 接受日期

摘要

基于模糊控制策略给出了锅炉系统新的控制方法. 工业锅炉的主要动态特性包括非线性、非最小相位特征、不稳定性、时滞和负荷干扰,采用传统控制方法难以实施有效控制. 运用GPE(Gaussian partition with evenly spaced midpoints)模糊控制系统对锅炉对象的主汽压进行了仿真研究和时实控制,模糊控制器能够克服许多干扰因素,产生了良好的控制效果,最后给出了模糊控制同传统方法的比较结果.

关键词 [模糊控制](#) [锅炉](#) [干扰](#)

分类号

Fuzzy Logic Strategy for Boiler Control

Liu Xiangjie,Chai Tianyou,Liu Hongbo

Electric Power Research Institute,Beijing;Research Center of Automation,Northeastern University,Shenyang

Abstract

This paper presents the new development of the steam generation control system of drum boiler using fuzzy control strategy. The major dynamics of a boiler include nonlinearities nonminimum phase behavior ,instabilities ,time delays ,and load disturbances. Traditional control strategy could not offer satisfactory result. A special subclass of fuzzy inference systems, called the GPE (Gaussian partition with evenly spaced midpoints) systems, is used to control the steam boiler system. The fuzzy logic controller has been tested in the real plant and good results have been obtained. A comparison with conventional control approaches widely used in the plant is performed.

Key words [Fuzzy control](#) [boiler](#) [steam pressure](#) [disturbance](#)

DOI:

通讯作者

作者个人主页 刘向杰;柴天佑;刘红波

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(366KB\)](#)
- ▶ [\[HTML全文\]\(OKB\)](#)
- ▶ [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
 - [刘向杰](#)
 - [柴天佑](#)
 - [刘红波](#)