

短文

## 大时滞工业过程的双控制器结构

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摘要

提出一种简单实用的双控制器方案,用于大时滞工业过程控制. 该方案含两个独立的控制器,即跟踪控制器和扰动控制器,使设定值响应得以与扰动响应分离,从而可同时获得良好的设定值跟踪性能和抗干扰能力. 双控制器系统含过程模型,但对过程模型不敏感,因而鲁棒性好. 文中将两个控制器设计为比例加积分(PI)类型,给出了具体的参数整定方法.

关键词 [时滞](#) [过程控制](#) [Smith预估器](#) [双控制器](#)

分类号

## A Double-Controller Scheme for Industrial Processes with Dominant Delay

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Abstract

A simple and practical double-controller scheme is proposed for industrial processes with dominant delay. It contains two separate controllers, a set-point controller and a load controller. The set-point response of the closed-loop system is then decoupled from the load response. As a result, the two controllers can be separately designed to obtain good performance in both set-point tracking and load rejections. The double-controller scheme is model based. It is, however, insensitive to the process model, resulting in good system robustness. The two controllers are taken to be proportional-integral(PI) type for simplicity. Tuning procedures of the two controllers are also presented.

Key words [Time delay](#) [process control](#) [double-controller](#) [Smith predictor](#)

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