

论文与报告

内模统一预测控制的进一步分析

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摘要

统一预测控制克服了一般预测控制器设计时难以比较每种控制器效果的缺点,将每个问题的设计统一在一种框架下进行,设计费用也显著降低.对单输入单输出系统,统一预测控制是一种优越的预测控制方法.采用内模结构就设计参数和模型匹配性对统一预测控制闭环系统的跟踪性能和鲁棒性能的影响作更为详细的分析.从中可以看出内模结构在预测控制中的独特优点.本文最后对一些结论给出了仿真结果.

关键词 [预测控制](#) [内模控制](#) [统一预测控制](#) [闭环性能](#)

分类号

Further Research on Unified Predictive Control Using Internal Model Structure

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Abstract

In unified predictive control (UPC), different controllers are designed under a unified frame, so that the difficulty of comparing control results of controllers designed in a general way is overcome and the cost of design is reduced considerably. UPC is a good predictive control method to SISO system. The effect of design parameters and the model matching property on tracking performance and robust performance of a UPC close-loop systems is further analyzed in details using internal model control structure. The unique advantages of internal model control when applied to predictive control are demonstrated. Some simulation results are shown in the end.

Key words [Predictive control](#) [internal model control](#) [unified predictive control](#) [close-loop performance](#)

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