

RESEARCH PAPERS

多频多变量预测控制系统的IMC结构及其改进算法

周立芳, 钱积新

Institute of Industrial Process Control, Zhejiang University, Hangzhou 310027, China

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摘要 Multirate multivariable predictive control system with the sampling mechanism that adjusts the plant inputs only once but detects the plant outputs several times during a period is examined. The IMC structure of the system is derived, and its robust stability and zero steady state error characteristics are analyzed. A new control algorithm is developed by adding the variation of the outputs to the index performance. The simulation results show that the method is effective and has zeros steady-state error.

关键词 [multirate](#) [predictive control](#) [internal model control \(IMC\)](#)

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The IMC Structure of Multi-rate Multivariable Predictive Control Systems and An Improved Algorithm

ZHOU Lifang, QIAN Jixin

Institute of Industrial Process Control, Zhejiang University, Hangzhou 310027, China

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Abstract Multirate multivariable predictive control system with the sampling mechanism that adjusts the plant inputs only once but detects the plant outputs several times during a period is examined. The IMC structure of the system is derived, and its robust stability and zero steady state error characteristics are analyzed. A new control algorithm is developed by adding the variation of the outputs to the index performance. The simulation results show that the method is effective and has zeros steady-state error.

Key words [multirate](#); [predictive control](#); [internal model control \(IMC\)](#)

通讯作者:

周立芳 lfzhou@iipc.zju.edu.cn

作者个人主页: 周立芳; 钱积新

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