中国纺织工程学报 2005 01:pp.543-547 ISSN: 1004-0226 CN: 44-1383/N

RESEARCH NOTES

一种改进的动态要图处理数据校正方法

刘凌冰[a,*], 吴安安[b], 吴敏[c]

[a] Department of Automation, Nanjing University of Science & Technology, Nanjing 210094, China

[b] Institute of Advanced Process Control, Zhejiang University, Hangzhou 310027, Ulsenia

收稿日期：2004-11-22；网络版发布日期：2005-01-07

摘要：Data reconciliation technology can decrease the level of corruption of process data due to measurement noise, but the presence of outliers caused by process peaks or unmeasured disturbances will sense the reconciled results. Based on the analysis of limitation of conventional outlier detection algorithms, a modified outlier detection method in dynamic data reconciliation（DDR）is proposed in this paper. In the modified method, the outliers of each variable are distinguished individually and the weight is modified accordingly. Therefore, the modified method can use more information of normal data, and can efficiently decrease the effect of outliers. Simulation of a continuous stirred tank reactor（CSTR）process verifies the effectiveness of thee proposed algorithm.

关键词：动态要图；数据校正；粗差检测；粗差方法；预处理；工业数据要图；动态；

分类号：

DOI：

A Modified Outlier Detection Method in Dynamic Data Reconciliation

ZHOU , Lingbo[a,*], GU , Ranqer[b], CHE , Jian[c]

[a] Department of Automation, Nanjing University of Science & Technology, Nanjing 210094, China

[b] Institute of Advanced Process Control, Zhejiang University, Hangzhou 310027, Tiansa

Received Revised Online Accepted

Abstract: Data reconciliation technology can decrease the level of corruption of process data due to measurement noise, but the presence of outliers caused by process peaks or unmeasured disturbances will sense the reconciled results. Based on the analysis of limitation of conventional outlier detection algorithm, a modified outlier detection method in dynamic data reconciliation（DDR）is proposed in this paper. In the modified method, the outliers of each variable are distinguished individually and the weight is modified accordingly. Therefore, the modified method can use more information of normal data, and can efficiently decrease the effect of outliers. Simulation of a continuous stirred tank reactor（CSTR）process verifies the effectiveness of thee proposed algorithm.

Key words: data reconciliation; outlier detection; gross error;

联系作者：
Email: Jianjian_che@163.com
作者个人主页: 刘凌冰[a,*], 吴安安[b], 吴敏[c]

扩展功能
本文信息
Supporting info.
PDF(1024KB)
[color=red]Free Trial[/color](KB)
Supplement
Supplement
本期目录/索引首页
期刊目录
本刊目录
本期目录
期刊目录
Email Alert
文献检索
高级检索
作者检索
相关文章
作者个人主页"刘凌冰"的"吴安安"的"吴敏"的
文章
本文的参考文献
文献检索
谷歌
Google
Google