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论文与报告

# 动态系统输入环节突发性故障的检测与辨识

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摘要
在分析输入环节脉冲型故障和阶跃型故障对动态系统的状态变化和测量系统输出信息的影响的基础上, 本文采用正向容错M-型滤波与反向WLS估计结合的方法, 建立了输入环节脉冲型故障的检测与故障幅度辨识算法;对于输入环节的阶跃型故障, 文中建立了分别适用于定常系统和时变系统的差分变换法与扩展状态空间方法.

关键词 故障检测 故障幅度辨识 动态系统

分类号 TP13



## Detection and Identification of Abrupt Fualts in Input Components of Dynamic System

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Abstract
Under quantitatively analyzing the influence of pulse-type faults and steptype faults from input components on state and output, a series of new fault detection approaches and magnitude identification algorithm are built, which are combination of onward fault-tolerant M-type filter with the reverse weighted least squared estimators. As for step-type faults, the difference transformation approach and the expanded state space approach are suggested for time-invariant and time-variant systems, respectively. These new methods given in this paper are practical.

Key words Faults detection fault magnitude identification dynamic system

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