对特定传感器故障敏感的最优奇偶向量检测与隔离方法

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FAULT DETECTION AND ISOLATION USING OPTIMAL PARITY VECTOR SENSITIVE TO SPECIAL SENSOR FAULT

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摘要 提出了一种利用对特定传感器故障敏感的最优奇偶向量进行故障检测与隔离的方法。主要思想是设计一个性能指标函数，使得最优奇偶向量对被检测的传感器故障最敏感，而对其余传感器故障和未知输入不敏感。与常用的广义似然比方法相比，该方法明显地提高了故障的检测能力，此外，对故障的隔离效果也更好。

关键词：

Abstract： An approach of fault detection and isolation using optimal parity vector is proposed. Its main idea is to design a performance criterion which makes the optimal parity vector be most sensitive to designated sensor's fault and least sensitive to other sensor's fault and unknown inputs such as noises. Through the Monte Carlo simulation, it is shown that the approach of choosing optimal parity vector greatly increases the ability of fault detection and the effectiveness of fault isolation is better than that of the GLT approach.

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