

## [2009-0238] Fault Detection Filter Design for Linear Polytopic Uncertain Continuous-Time Systems

收稿日期 修回日期 网络版发布日期 2009-9-17 接受日期

摘要

关键词

分类号

## [2009-0238] Fault Detection Filter Design for Linear Polytopic Uncertain Continuous-Time Systems

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Abstract

The paper studies the problem of fault detection filter design for uncertain linear continuous-time systems. A design procedure dealing with parameter uncertainties is proposed for residual generation, the sensitivity to fault and the robustness against disturbances are both enhanced on residual outputs through satisfying some performance indexes. By the aid of the Generalized Kalman-Yakubovich-Popov (GKYP) Lemma, the fault sensitivity performance index can be dealt with in given frequency range directly, which avoids approximations associated with frequency weights of the existing techniques. An iterative algorithm based on linear matrix inequality (LMI) is given to obtain the solutions. A numerical example is given to illustrate the effectiveness of the proposed methods.

Key words

[Fault detection](#) [Polytopic uncertainty](#) [GKYP lemma](#) [Linear matrix inequality \(LMI\)](#).

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